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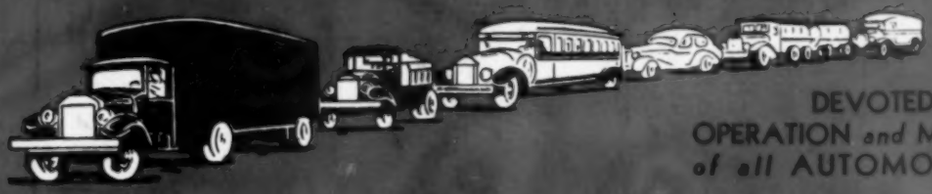
FLEET OWNER

VOLUME 20 •
NUMBER 1 • •
JANUARY, 1938



DEVOTED *to the* BETTER OPERATION *and* MAINTENANCE *of all* AUTOMOTIVE FLEETS

Reo Matched-unit Engineering CUTS HAULAGE COSTS!

● *Matched-unit engineering* of chassis, body and equipment is Reo's latest contribution to lower haulage costs. It eliminates the last element of chance in truck buying—assures you of a truck engineered and built as a unit to meet your exact needs. Regardless of what your requirements may be, Reo factory-trained men in your own community—familiar with your problem—see that you get the unit to fit your job and deliver maximum "profit mileage." See your nearest Reo dealer for details.

REO

REO MOTOR CAR COMPANY, LANSING, MICH.

Standard Automotive Engineering Service
BOOSTS MILEAGE 1.1 MILES PER GALLON
for this Motor Coach Company
STARTLING as this figure may be, the saving is not unusual where Standard Automotive Engineers have worked with fleet operators.
This intra-city bus company operates about four hundred thousand miles per month. When the Standard Automotive Engineer was given permission to work with the maintenance department, the Company was averaging 3.9 miles per gallon on the fuel it was using, with comparatively new equipment. Within one year this figure had been raised to 5.0 miles per gallon and has stayed at or near that mileage for the past six months.
Standard Automotive Engineering is not a "one time" service. These engineers work with your maintenance department—locating inefficient motors and adjusting them to get the full power out of the fuel. They have scientific instruments for testing—they know gasoline and lubricants from the ground up.
There's an Automotive Engineer in your local Standard Oil office. Call him in. Let him explain just *how* this service and Standard Oil products can save *you* money just as they are for this motor coach company. Phone him today.
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STANDARD OIL COMPANY (INDIANA)
AUTOMOTIVE ENGINEERING SERVICE
LOWERS MILEAGE

R v.20-21 1938

STANDARD OF AUTOMOTIVE ENGINEERING SERVICE
LOW MILEAGE

PACIFIC GREYHOUND LINES
401 KANSAS STREET
SAN FRANCISCO, CALIFORNIA

R. H. AHRENS
GENERAL SUPERINTENDENT
MAINTENANCE AND EQUIPMENT

November 15th, 1937.

Champion Spark Plug Company
Toledo, Ohio

Gentlemen:

Spark plugs are one of the most vital factors affecting dependability and efficiency in bus operation.

The extra range performance of Champions have enabled us to meet the great variety of engine requirements with only two types - one in metric and in 7/8 inch sizes. Naturally this is pleasing from a maintenance standpoint, for simplicity and standardization make for low costs and trouble-free service.

Yours very truly,

R M Ahrens

YOU CAN DEPEND ON CHAMPIONS FOR LOWEST MAINTENANCE COST

Champion Spark Plugs have long been the choice of the outstanding fleet operators of the nation because they meet every haulage problem, every type of service, and every operating condition.

Like Pacific Greyhound, one of the three Champion users to win Bus Transportation's Maintenance Awards in 1937, many other fleet operators have found that the design and exclusive properties of Champion's Sillimanite insulator provide maximum heat range which prevents fouling or pre-ignition. They have found that Sillment, the compressed dry powder seal between insulator and center electrode, makes all Champions *permanently* gas-tight and keeps them permanently in their designated heat range.

These exclusive Champion features, and the broad range of services which Champions will cover with the minimum number of types, assure fleet operators of lowest maintenance costs and the maximum in dependable service. Insist on Champions for lowest maintenance cost and dependability.

CHECK AND CLEAN SPARK PLUGS WHEN YOU CHANGE OIL

Tech

100 *TRUCKS*

Part of the fleet of 100 passenger-car transports of the C. & M. Auto Forwarding Co., St. Johnsville, N. Y. Manager Gee reports an enviable fleet record on Texaco 100%.

TEXACO

100% TEXACO

OUT of Buffalo to all principal eastern cities scurry the tractor-trailers of the C. & M. Auto Forwarding Co. of St. Johnsville, N. Y. . . . delivering brand-new Packards to eager, expectant dealers and owners.

To handle this horde, C. & M. maintains a day-and-night schedule, with a fleet of 100 tractor-trailers.

On exacting transportation of this nature, everything must dovetail . . . management, drivers, garage personnel, despite heat or cold.

The C. & M. Auto Forwarding Co. leaves nothing to chance . . . it is on Texaco Automotive Products 100%.

Trained automotive engineers are always available for consultation on the selection and application of Texaco Automotive Products. Prompt deliveries assured through 2070 warehouse plants throughout the United States.

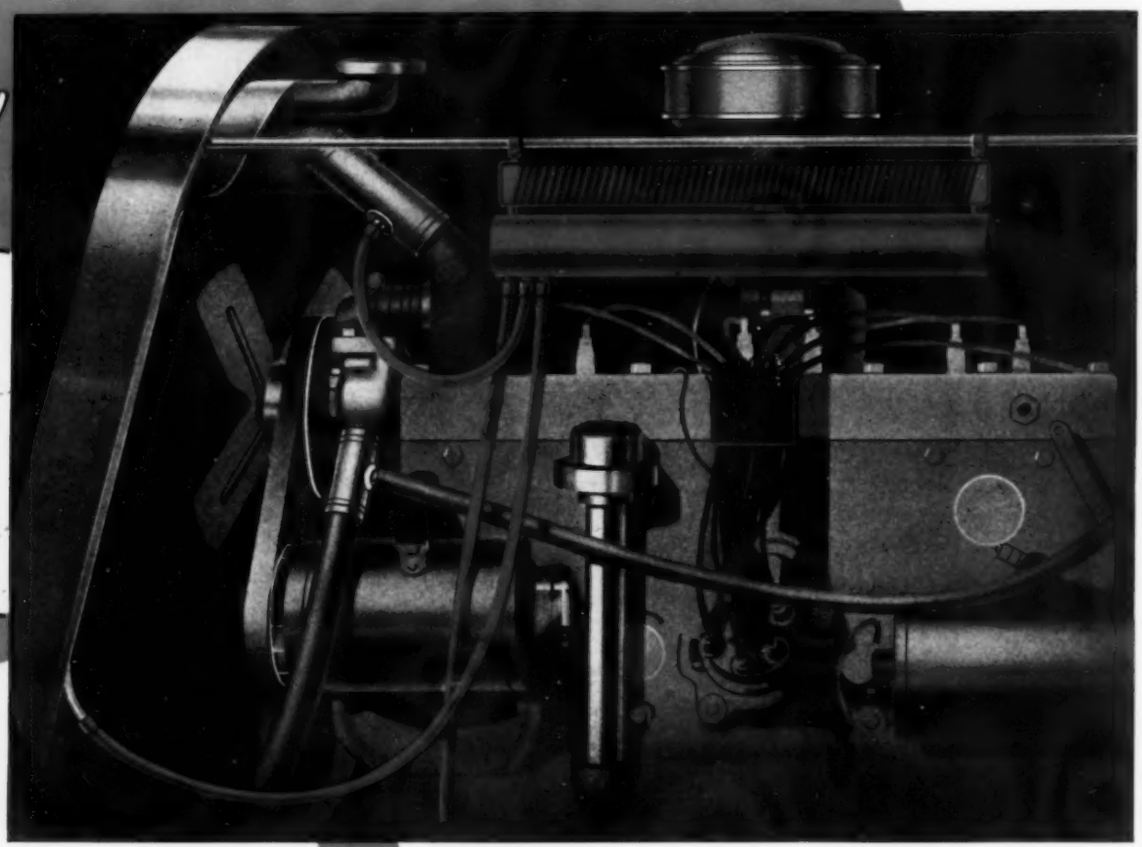
The Texas Company, 135 East 42nd Street, New York City.

"C. & M." finds Texaco Marfak the ideal lubricant for wheel bearings, shackles, grease-type universal joints, steering connections and all chassis points. Marfak stays put, clings, protects parts from road shocks, water and grit.

TEXACO
REG. T. M.

TRUCK LUBRICANTS

STOP SURGE LOSS with a DURKEE-ATWOOD KON-SER-VOIR FOR YEAR-AROUND USE



PREVENTS EVAPORATION EXPANSION AND SURGE LOSS OF SOLUTIONS IN COOLING SYSTEMS

ELIMINATES CORROSION AND CONSTANT RE-FILLING

The KON-SER-VOIR is an important new item. It is a combination expansion tank and condenser unit which prevents the escape by evaporation or surge, of water, anti-freeze, and other solutions with either high or low boiling point. By conserving and retaining the solution, refilling of the radiator becomes a monthly or bi-monthly operation instead of a daily chore. The use of soft water is possible—there is less formation of lime and rust and less corrosion. Constant cleaning is no longer necessary, and with the danger of overheated cooling systems eliminated, motor operation becomes more efficient.

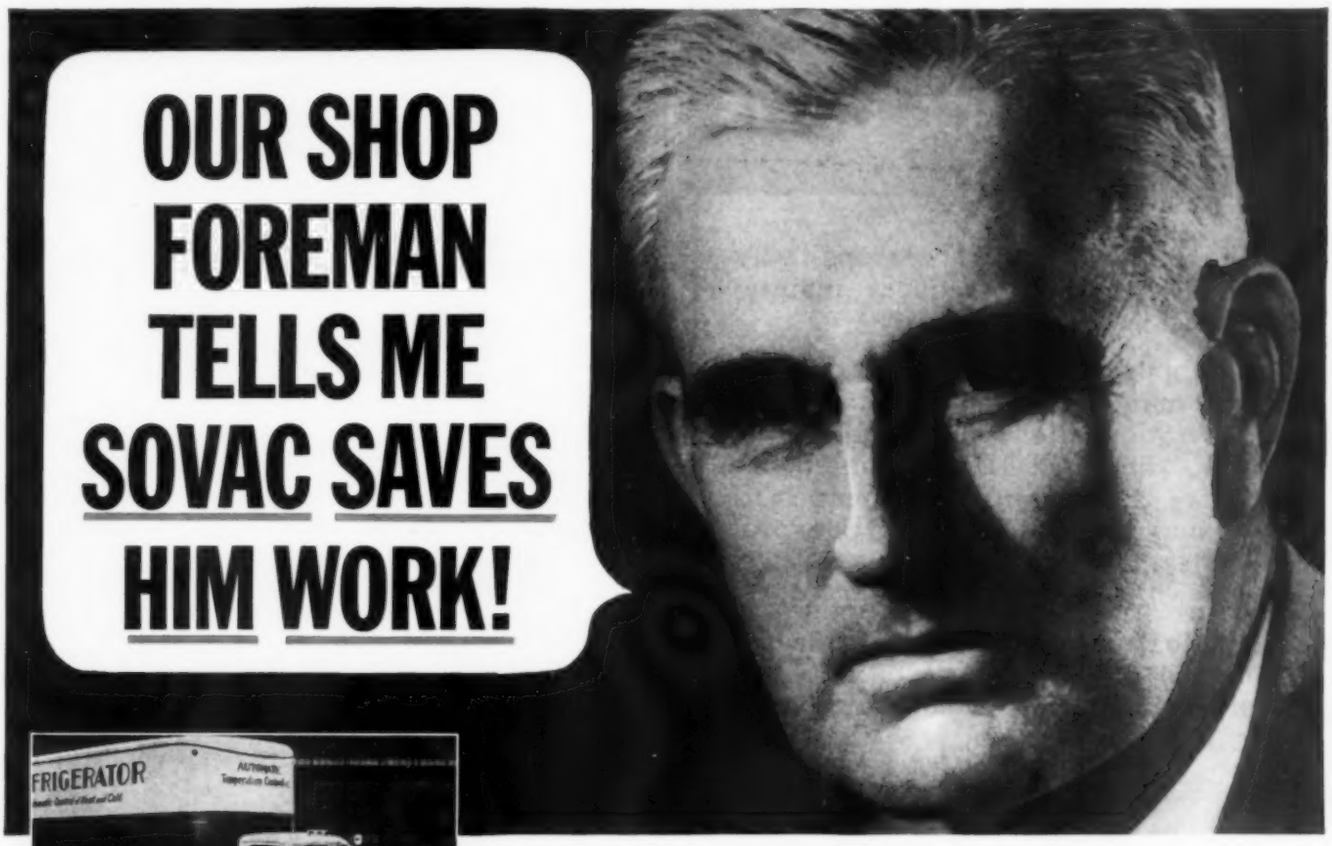
The KON-SER-VOIR is made entirely of copper, brass and rubber—there is nothing to rust. It is easily and quickly installed, and universal in type for truck and bus use. A money-saving, trouble-saving item, winter and summer.

Made by

DURKEE-ATWOOD COMPANY

MINNEAPOLIS, MINNESOTA, U. S. A.

102 MEAT PACKERS CUT COSTS TO THE BONE WITH SOVAC



Sovac Users Report Better Mileage on Both Oil and Gasoline...Less Wear and Fewer Motor Overhauls ...Rings and Valves that Stay Clean, Free of Gum!

YOU OUGHT TO SEE the "fan letters" Sovac gets! By the dozen! By the hundreds!

They come from hard-headed business men in charge of operating and maintenance. Men who think in terms of dollars...expense per truck-mile ..."*How much does it cost me?*"

Sovac helped each one of these men lick a different problem. But they *all* agree on one thing: *Sovac saves them money!*

Why not make us prove this statement?

Let us send a Socony-Vacuum Fleet Engineer to call on you. He's an experienced lubrication *expert*...with a thorough-going knowledge of truck operation and maintenance.

Let him run a controlled test on your own trucks, in regular service. He'll give you proof that Sovac will bring down your operating expenses... keep your trucks *out of the shop!*

Change to **SOVAC OIL**

SOCONY-VACUUM OIL COMPANY, INCORPORATED

SOCONY-VACUUM

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · MAGNOLIA PETROLEUM COMPANY
CHICAGO DIVISION · WHITE EAGLE DIVISION · WADHAMS OIL COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

FASTER . . . . BETTER OAKITE CLEANING REDUCES MAINTENANCE COSTS

THERE are sound reasons why Oakite cleaning reduces maintenance costs.

Most important to you is the custom-fit recommendations which take into consideration the type of trucks in YOUR fleet, YOUR maintenance facilities, the cleaning equipment YOU have available and what YOU expect your cleaning to do.

With every bit of speed, economy and safety that constant chemical research can build into them, Oakite materials offer an effective, low-cost answer on jobs like these:

Washing painted and lacquered truck bodies

Cold or hot solution cleaning of chassis, motors, etc.

Cold or hot cleaning of repair parts

Cold or hot paint stripping

Cleaning of floors

Cooling System Maintenance

Let us give you the benefit of the everyday practical experience of our nationwide service organization helping other fleet owners.

Our suggestions will be specific . . . fitted to YOUR requirements. Write today, no obligation, of course.

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OAKITE PRODUCTS, INC., 52G Thames Street, New York, N.Y.
Branch Offices and Representatives in All Principal Cities of the U. S.

OAKITE
SPECIALIZED INDUSTRIAL CLEANING MATERIALS & METHODS

Charter CCA Member

FLEET OWNER

Published Monthly in the interests of Automotive Fleet Owners, who Operate or Direct their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

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SMMS

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"The Pause that Refreshes knows about PEDRICK HYDRAULICS

40,000 miles of service and still getting 700 miles per quart of oil *with*

Pedrick

HYDRAULIC PISTON RINGS

● We are proud to offer you this letter from the Houston Coca-Cola Bottling Co. as further evidence that Pedrick Hydraulic Piston Rings deserve your serious consideration. The experience of this fleet operator is the same as that of hundreds of other large fleet operators. Pedrick Hydraulics definitely excel over all other types of rings from every performance angle. More power —less oil—higher speeds and longer wear; that's the verdict wherever Pedricks are given a chance to demonstrate their worth. See for yourself what Hydraulic performance means—install a set of Pedricks in your next reconditioning job.

J. E. EVANS, MANAGER

HOUSTON COCA-COLA BOTTLING CO.

Coca-Cola

707 LIVE OAK ST.

HOUSTON, TEXAS

November 18, 1937.

Wilkening Mfg. Co.,
2000 So. 71st Street,
Philadelphia, Penna.

Gentlemen:

Early this year the local White branch induced us to make our first installation of your engineered Hydraulic ring set.

We now have some jobs running with over 40,000 miles of service on these rings and still giving 600 to 700 miles per quart of oil.

In contrast to the service we were getting from other popular brands of piston rings we consider this to be remarkable performance and take pleasure in saying that we are entirely satisfied and are installing your Hydraulic rings in every motor we take down.

Very truly yours,

HOUSTON COCA-COLA BOTTLING CO.

Sam A. Thomason

Garage Superintendent.

Our fleet engineers are ready personally to help you make your vehicles more efficient. Write today for a test installation of Pedrick Hydraulics.

Wilkening Manufacturing Co. *Philadelphia*

Export Dept.: General Motors Corporation, Export Division, New York City
In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto

Something New in a

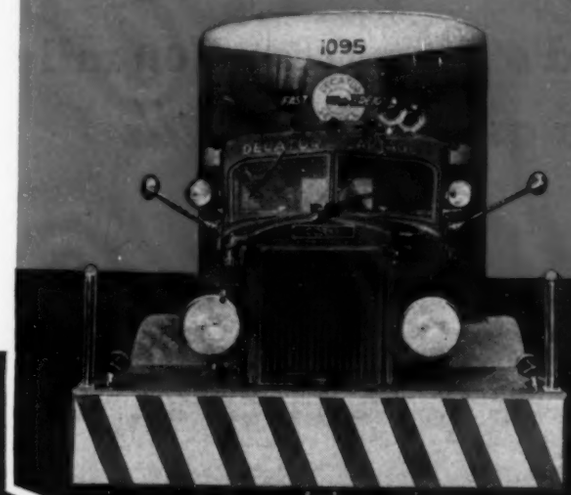
CUMMINS DIESEL-POWERED TRUCK

By installing the fuel tank and batteries ahead of the front axle in this truck, powered by a Cummins Diesel, Decatur Cartage Co. is able to meet the Illinois weight law of 8,000 lbs. on front axle and 16,000 lbs. on driving axle and trailer axle, and come within the law as to length permissible and take full advantage of Cummins Diesel power, fuel economy, and low maintenance . . . "twice as far for half as much."

With the Cummins Diesel this arrangement is practical because of the reduced fire hazard in the low-cost fuel oil.

Ask for the new booklet "Twice as Far for Half as Much" . . . see if you can afford anything less than the Cummins Diesel. Cummins Engine Company, 1103 Wilson Street, Columbus, Indiana.

FUEL TANK *ahead of* FRONT AXLE



CUMMINS *Dependable* DIESEL

PIONEER IN MODERN DIESEL DEVELOPMENT

MILEAGE DOUBLED···
Repair Costs Cut 2/3
La Espiga de Oro BAKERY
La Espiga de Oro BAKERY
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3622 EAST 1ST ST.

Bakery makes big savings with Store-Door Silvertowns

● In Los Angeles, La Espiga de Oro Bakery operates 14 trucks which travel well over a half million miles per year. Delivering baked goods, these trucks make as many as 85 regular stops per truck each day and hundreds of traffic stops and starts. Tire costs were running high—delays costly and troublesome.

Then they put on Goodrich Store-Door Silvertowns—tires specially designed for this kind of service. Tires average better than twice the mileage formerly obtained! The monthly cost for tire maintenance is less than one-third—almost one-fourth of what it was before! Delays are as one to eight! Not one tire has failed in the sidewall!

"We used to believe," says Mr. Joseph Ruiz, Proprietor, "that price was the important thing. But we have been so impressed with the extra mileage obtained with Store-Door Silvertowns that we fully realize now we would have saved much money had we used your tires long ago."

Built to Save Money

In all kinds of delivery service where stops and starts are frequent, Goodrich Store-Door Silvertowns are knocking down costs. A specially designed tread gives greater road contact and more traction because of numerous non-skid edges. Extra thickness provides longer wear. In all the most popular sizes, this tire is Triple Protected in the sidewalls, too. This money-saving invention checks 80% of premature tire failures—lets tires wear out s-l-o-w-l-y.

Call the Goodrich dealer. He'll give you all the facts and show you how you, too, can save money.

HOW TRIPLE PROTECTION WORKS

1. **PLYFLEX**—distributes stresses throughout the tire—prevents ply separation—checks local weakness.
2. **PLY-LOCK** — protects the tire from breaks caused by short plies tearing loose above the bead.
3. **100% FULL-FLOATING CORD**—eliminates cross cords from all plies—reduces heat in the tire 12%.

Goodrich Triple Protected Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

DEFINITELY SAFER

because they are glazed with

PLEXITE

REG. U.S. PAT. OFF.

THE SAFER SAFETY GLASS

New Fleets of 20 United Parcel Service and 130 Continental Baking Co. Trucks Glazed Throughout with Plexite
BUILT BY THE GERSTENSLAGER COMPANY

• It is just sound business to have your fleet equipped with the safest safety glass you can buy . . . Plexite, unlike the ordinary rigid safety glass, gives like a net on impact and cushions the blow, yet actually provides much greater resistance to penetration—a *plus* safety factor that can be definitely demonstrated—a factor which translates into profit protection. Plexite is a superior product in every respect. It provides perfect visibility at all times and cannot blotch or discolor. It requires no sealing and can be cut almost as easily as ordinary window glass . . . Get the facts on Plexite—facts that mean money to you. Write for literature.

AMERICAN WINDOW GLASS CO. · PITTSBURGH, PA.

BUSINESS WANTED IT
FORD BUILT IT

New One-Tonner BRINGS FORD V·8 ECONOMY TO ONE-TON RANGE

Many operators of hauling and delivery units have asked Ford to build a unit that would handle one-ton loads with the same proved performance and economy that Ford V-8 units of larger and smaller capacities bring to their respective fields. Result: The new Ford V-8 One-Tonner.

The One-Tonner has a 122-inch wheelbase. It has been designed to take advantage of the unusually economical 60-hp. V-8 engine, although the 85-hp. V-8 is also available where higher speed and faster acceleration are desired.

Though low in price, the One-Tonner has the time-proved features that make the larger Ford V-8 Trucks so reliable. Frame, springs and axles are designed for high reserve strength, without penalizing economy with excess weight.

Visit the nearest Ford dealer and arrange for an "on-the-job" test with your own loads and your own driver. While there, you will also see the new 1938 Ford V-8 134-inch and 157-inch wheelbase Trucks and the new 112-inch Commercial Cars — the finest, best looking units in all Ford history.

New Features of 1938 Ford V-8 Trucks

New styling • More comfortable cabs, more head room, new interior trim, softer seats • Quicker stopping brakes • New 134-inch wheelbase, improved load distribution • For 134 and 157 inch trucks, new standard frame width • Larger spindles • Easier steering, roller type with 18-inch wheel • TIME-PROVED FORD TRUCK FEATURES: V-8 engines, 85 and 60 hp. • Full-floating rear axle with tapered roller bearings • Straddle-mounted pinion, ring-gear thrust plate • Centri-Force Clutch, low pedal pressure, high torque capacity • Needle roller bearing universal joints on 134 and 157 inch trucks • Full torque-tube and radius-rod drive, free-shackled springs • Ford Engine and Parts Exchange Plan.

1938 FORD V·8 TRUCKS AND COMMERCIAL CARS

FORD'S SEVENTH YEAR OF V·8 SUCCESS

CROSS TOWN or CROSS COUNTRY

AERO MAYFLOWER — Nation-Wide Operator — Capitalizes on INTERNATIONAL'S Magnificent Service

●Whether International Trucks roll up mileage on the nation's highways or stick to city streets, they are *always close to International factory-standard service.*

Through the years, International Harvester has set up the *largest factory-owned truck service organization in the world* — 237 branches located at strategic points in the United States and Canada, fully equipped to give you the kind of service you have a right to expect. Factory-trained service men, working to precision standards and using genuine International quality parts, turn out the work in the shortest possible time.

Your truck dollars go farther with International because your investment is protected throughout the life of the truck by this matchless after-sale service. Visit our nearby branch and see International service "working." Talk to International owners and you will know its value.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue (INCORPORATED) Chicago, Illinois

INTERNATIONAL

Shown below is one of a big fleet of heavy-duty Internationals owned and operated by the Aero Mayflower Transit Co., Indianapolis, Ind., in its coast-to-coast operations.

INTERNATIONAL TRUCKS

VOL. 20
NO. 1

FLEET OWNER

JANUARY
1938

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

TRUCKS AND SHOW WINDOWS

● Appreciation of the high advertising value of smart, well-groomed delivery vehicles, is growing rapidly among American merchants, according to I. B. Babcock, president of General Motors Truck Division. . . . Mr. Babcock cited a recent conversation between one of his executives and the head of a leading Detroit department store. "How often do you change your display windows?" asked the GMC man. . . . "Why, every week, of course" replied the merchant. "We spend plenty of time and money to make our windows as attractive as possible. A lot of people see those windows." . . . "And how long since you have checked the appearance of your delivery trucks? Doesn't anyone ever see them?" . . . "Well, I guess it must have been at least six months. I see what you mean. Let's go down and look them over." . . . As a result of the inspection, several units of the department store's delivery fleet were replaced by new equipment and the remainder were refinished. . . . Consciousness that trucks can serve to advantage as traveling advertisements has become much more acute within the last year or two, Mr. Babcock pointed out. He attributes this fact to the startling improvements that have been achieved recently in the appearance of commercial vehicles. . . . We agree. Mr. Babcock.

●

HATS OFF! THE DRIVER

● Fleet operators making domestic deliveries are sometimes confronted with unusual driver-problems. Many times these are not entirely the fault of the driver, especially those in which "failure-to-make-delivery" is the bane and bugbear. . . . Listen to this one, sworn to, sealed and delivered by Bert Barnes, who is doing a lot of very fine work for United Parcel Service. . . . It seems that there is a driver in the UPS Los Angeles establishment who thinks he has encountered the soundest sleeper since Rip Van Winkle. In making a delivery to a house, he found a note instructing him to "Knock hard; man asleep." In a steady crescendo of noise, the driver aroused most of the neighbors, but not the man, so he left a "not home notice," explaining that he would call the next day. On this second call he found another note, which read, "Received your note. Sorry you couldn't awaken my husband. I work during the days and he works nights; so knock harder this time please."

The driver did. He made all the noise possible without battering down the door—but still no answer. Again he left a "Not home notice," this time explaining that he would call the next day at a specific hour. On this, his third trip, just as he reached the porch with his heart in his shoes, and wondering if Rip Van Winkle would be any harder to awaken, he heard an explosion—two thundering alarm clocks went off together. A moment later the man himself appeared at the door, rubbing his eyes, and thanking the driver for all the trouble he had taken. . . . So, you see, it's not *always* the fault of the driver. An efficient driver in a well-managed fleet often goes out of his way to do things right. . . . All too often the management doesn't hear about these things and that's why we're putting in a "plug" for the driver in this column this month. . . . Everyone else seems to be picking on the driver, so this simple change ought to be a welcome one. . . . Don't mention it, boys.

●

RUBBER PAINT

● It's here, and no kidding this time; a new product that is claimed to be true "brushing rubber"; in other words a true rubber paint. . . . Available in black, gray, brick-red and special colors that show resistance to acids, alkalies and weathering. . . . Now don't get us wrong. This product is *not* (as yet) intended for use in refinishing truck bodies. Rather, it is a protective coating for concrete, steel, wood, sheet-metal, etc. . . . It is claimed to give a firm, glossy finish and that but two coats are required. . . . Various industries are expected to make scores of uses for this new product, especially where water-proofing is necessary. . . . While it's not exactly down the fleet "alley," we thought we might mention the thing here, just to keep you informed. . . . Further information, if you want it, may be obtained by writing to The Editor. . . . No obligation, of course.

●

H. Clay Fischer
Editor

●

The Editor's Column » »

(Continued from Page 15)

BEST TRUCK DRIVERS

● Yes sir! . . . The best truck drivers in the country are these winners in the "Truck Drivers' Rodeo" held recently in Louisville, Ky., in connection with the A. T. A. Convention. . . . They are, left to right: William D. Campbell, Decatur Cartage Co., Chicago, 2nd place; P. H. Lacey, Interstate Motor Freight, Grand Rapids, Mich., 3rd place; Wm. J. Frederick, Kentucky Transport Corp., Louisville, Ky., 1st place; and William Korbe, Denny Motor Transfer, New Albany, Ind.

●

GAS TAXES PAY THE PIPER

● We've all heard of the expression, "*When someone dances, the piper must be paid*", or words to that effect. . . . Well, several thousand Indians danced recently to weird music in the sixteenth annual "Inter-Tribal Ceremony" at Gallup, New Mexico, and between the Indian dances a brass band played jazz tunes to further entertain the visiting white folks. . . . Motorists and fleet operators of the town contributed from $5 each upwards, under compulsion, to pay for the "red" and the "white" music, we learn from *American Petroleum Institute*. . . . And, now that the show is over, they are feeling pretty "blue" about the entire business. . . . It seems that several years ago the receipts from the "Indian show" fell off. The local "push-em-up" boys looked about and decided that the scalps of the town's motor vehicle operators looked most promising. . . . So an ordinance was passed, levying a special tax of one cent per gallon on the gasoline used by them. (All of this in addition to a 5c state tax and the 1c Federal tax. . . . The proceeds of the municipal gasoline tax, which is a special, class tax amounting to about $5 on every motorist, were used to pay for music and other fixings of the celebration. . . . Taxation of Gallup's motorists to defray the costs of the Indian show now is regarded as one of the most flagrant abuses of the powers of taxation in the United States. . . . However, the "scalping" of motorists is not confined to Gallup, because in a number of states, chiefly those where financial policies have been a game of "ducks and drakes," millions of dollars paid by motorists for better and safer roads have been misused for other purposes. . . . Motorists and fleet operators in more than a dozen states, wearied of the scalping process, themselves have donned warpaint and are whooping for amendments to the state constitutions to prohibit the diversion of road tolls to non-highway purposes. . . . Such "scalping" already is outlawed in five states.

●

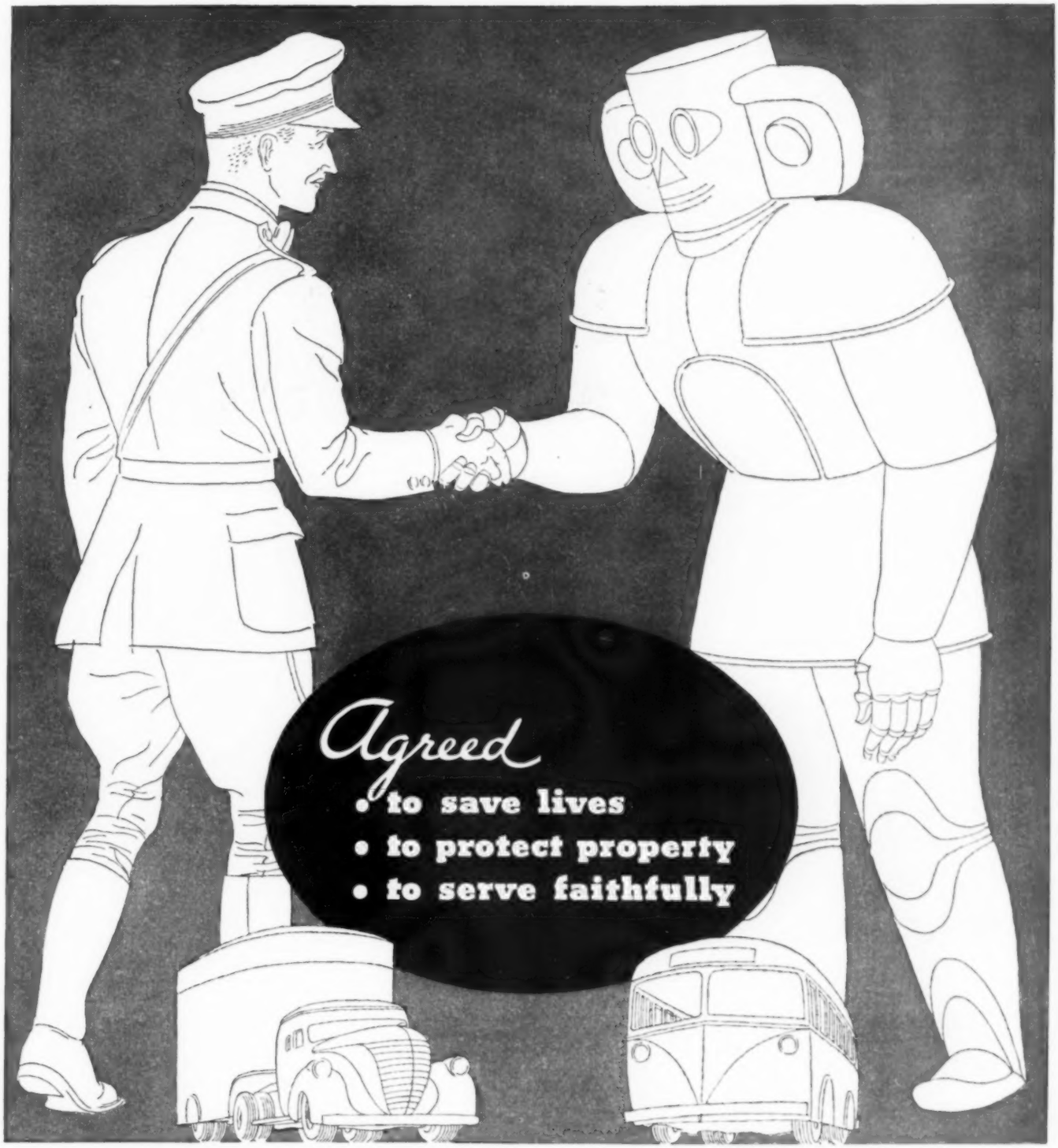
ELECTRIC WELDING NOTES

● Elsewhere in this issue you will find quite a complete story on how Electric Arc-Welding is being used with much success in the shops of Motor Express Company, Cleveland, Ohio. . . . A visit to these shops uncovered a great deal of "meat" on the subject, which we feel certain you will find interesting. . . . Incidentally, this seems to be the *first* real article on electric welding to appear in *any* truck publication, which proves that *again* we pioneer in editorial excellence, and all that sort of stuff. . . . The picture which accompanies this little self-pat-on-the-back is one also taken in Motor Express Company's shops, which we couldn't find room for in the story. . . . You will note that there is also a break which has been arc-welded on the side of the trailer body, directly over the right-hand end of the Chevrolet trade-mark. . . . In case you can't recognize it, the vehicle being worked on is one of those trailers used for carrying new cars from assembly-plant to dealer. . . . And while we are on the subject of electric welding, let us again call your attention to the $200,000 Award Program which The James F. Lincoln Arc Welding Foundation is conducting. . . . Awards are offered for essays explaining how to organize, develop and conduct a welding service. This is an opportunity, for men who will write a report of such study and submit it to the Foundation on or before June 1, 1938, to be richly rewarded. . . . Fleet men or mechanics in fleet maintenance departments who feel that they want to participate are invited to obtain complete particulars by writing The Foundation, P. O. Box 5728, Cleveland, Ohio. . . . There's nothing to buy—no box-tops to send in—etc. . . . And you *might* win a big prize, become financially independent, and tell the boss where to go.

●

SPARK PLUG DISCARDERS

● Miyoshi Haitani, parts manager of General Motors, Japan, recently visited the AC Spark Plug Division factory at Flint, Mich., and brought with him some interesting reports. . . . Most of the motor cars in Japan, he related, are operated in taxicab service. And the fixed fare in Japan (regardless of the length of the ride) is one yen—less than thirty cents, to you. . . . With the price of gasoline in Japan comparable to the price in this country, Mr. Haitani declared that the most careful attention to the operating efficiency of the car is necessary, if a profit in taxicab operation is to be realized. . . . Usually when a car goes into the garage for engine adjustments, he says, worn spark plugs—notorious as a cause for gasoline waste—are discarded and new ones always installed. . . . Careful attention, too, is paid to the carburetor and the air cleaner, other important factors in gasoline economy. . . . In the accompanying photo, John W. DeLind, Jr., who represents AC Spark Plug Division in General Motors Export, is shown greeting Mr. Haitani (right); the gentleman in the center is Maoichio Itoh, zone manager, General Motors, Japan. . . . The picture was snapped as they visited the AC plants recently, to inspect manufacturing operations.



Modern operators of commercial vehicles, who take pride in their records of safety and service, find a staunch ally in the smooth, positive control of genuine Westinghouse Air Brakes . . . whose abundant power gives the operator a constantly adequate braking force to more than meet the stiffest requirements . . . whose finely graduated control insures smoother stops, less wear on brake lining, less chassis strain . . . and whose virtually effortless operation never permits brake fatigue to rob him of alertness or efficiency. Naturally, the many advantages enjoyed by operators of air-equipped units are returned to the owners in lower maintenance costs, more rapid schedules and extra trips per day, in addition to the security assured by the world's finest control. The safety, dependability and efficiency of genuine Westinghouse Air Brakes are available for every commercial vehicle, as low as $139.00 installed.

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Genuine **WESTINGHOUSE AIR BRAKES**

DETROIT PUBLIC LIBRARY

MANUFACTURERS of products adaptable to the needs of fleet operators will probably be interested in the fact that the Automotive Service Industries Show management recognized this important market at their recent Exposition in Chicago. . . . Our photographer snapped the accompanying picture as evidence. . . . Thanks, very much, Mr. Show Manager! We've always tried to tell everyone that it was a market worth going after.—H. C. F.

Stripping *the* Thread

(*Continued from page* 16)

ALASKA TO N. Y. BY TRUCK

● A good-will "trail-blazing" truck recently made the trip from Alaska to New York City, sponsored by Joseph D. Burke, director of truck sales for Dodge. (We needn't tell you that one of his own trucks was used). . . . Distance recorded by the truck upon arriving at New York was 4,621 miles. The trip was made in the interests of good-will and commerce and to focus attention upon the need for the proposed International Highway between Fairbanks, Alaska and Seattle, Wash., passing through the Yukon Territory and British Columbia. . . . Temperature along the route never reached the freezing point, varying from 58 degrees to 41, and hitting a new high of 70 at Washington, D. C., where the truck is shown in the illustration. . . . Although no attempt was made to establish a time record, total *driving* time was less than 100 hours. . . . Al Radero, Dodge's crack driver, piloted the truck on the entire run.

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RESIGNATION

● One of the assistant attorneys in Missouri's state highway department recently resigned. . . . That's not "news". . . . He gave as his reason the fact that he did not consider it fair to the taxpayers of the state for him to draw pay for doing nothing. . . . That *is* news! . . . What do *you* think?

CABLE CONTROVERSY?

● A good friend of ours, who operates a high-class automotive service establishment, tells us that he replaces more high-tension ignition cable because it is defective *inside*, rather than outside. . . . Further questioning revealed his theory that high-tension cable breaks down *internally* after a considerable amount of high-tension current has passed through it, and that even though the insulation might be perfect, the wire inside will be defective. . . . Tests which he has made, using a milliameter, reveal this fact very clearly, he claims. . . . In other words the molecular structure of the copper used in the cable undergoes a very definite change, caused by the flow of current through it, after it has been used for a long time, and a high resistance is set up. . . . He is not talking of *burned*, wire due to loose connections, arcing, etc., but his theory is based upon the assumption that all connections will be continuous and tight. . . . If there is anything at all to this, it's a *new* one on us. . . . We have seen and heard cable manufacturers warn about the dangers of those six little devils called Corona, Abrasion, Moisture, Oil, Air and Heat, which take their toll in the life of the *insulation* on high-tension cable. . . . However, no one, to our knowledge, has ever talked about replacing high-tension cable because it has "worn out" *internally*. . . . Now, if this bird who told us about it were somebody who didn't know any better, we would be inclined to say, "Oh Yeah?" . . . But inasmuch as he was practically "born with a voltmeter in his hand," we can't dismiss his thoughts too lightly. . . . We hope that the engineers of some of the wire manufacturers will read this and will give us their versions of the story. . . . And we also want to hear from fleet operators, telling us just what they think about it. . . . Who will be among the first to write Editor Fischer, giving his reaction to the suggestion advanced by our friend?

AT HOME AND ABROAD

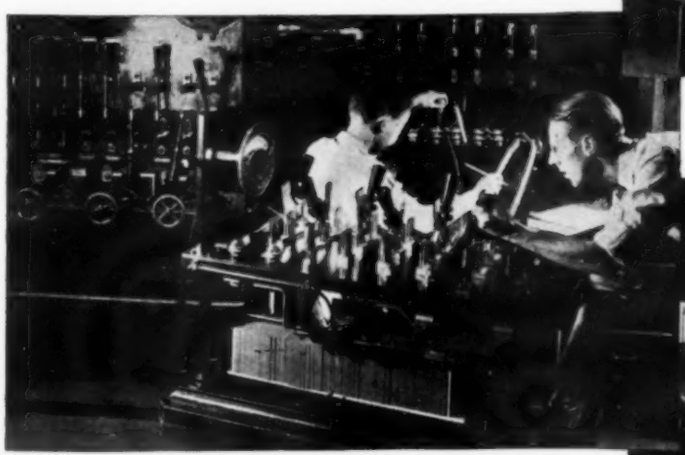
● These two gentlemen returned recently from a tour of the principal industrial centers of Europe, attending, while abroad, the Annual Automobile Exhibition, and the Commercial Motor Show in London, and the Paris Automobile Show. . . . With these three great international shows as a background they then visited the National Motor Truck Show at Newark, N. J., where they were able to make a number of interesting comparisons between the English commercial motor show and our own. . . . The report was that while the London show was held on a much larger scale, they felt that the advancements in commercial vehicle design in this country, as compared to overseas, would warrant a more pretentious show here—in a larger hall capable of displaying more vehicles and attracting a larger attendance. . . . What with the growing interest in motor transportation in this country, it would seem that we could readily support such an exhibit here to the great benefit of the industry. . . . And, before we forget, the gentlemen pictured are Messrs. Willard and Walter Rockwell, president and vice-president, respectively, of the Timken-Detroit Axle Company.

Exide outlaws guesswork in building batteries

. . . these grueling tests produce a battery you can depend on in fleet service . . .

To guard against the slightest impurity, the materials for Exide Batteries are tested by means of the spectroscope—the most efficient tool man has devised for identifying minute traces of such substances.

Exide's "life cycle" test compresses a year of the hardest service into a single month. Charge, discharge, then charge again . . . dozens of test batteries at a time. All batteries combined undergo 294,840 cycles a year.



After chilling a battery to 0°F., Exide makes it deliver more than enough power to set a truck engine in motion at sub-zero temperature. The test determines how long the battery will keep on delivering power at this tremendous rate.

•

Even a pin-point imperfection can shorten a battery's life. Exide photographs important raw materials through the microscope and checks them against Exide standards. One of the many ways in which Exide maintains quality-control.

REPRESENTATIVE Exide Batteries must come through these tests with flying colors. That is why you can depend on Exide to cut your battery maintenance cost. The Exide line is complete, with Commercial Type Exides that take care of 90% of all commercial vehicles, and the Exide heavy-duty line for large trucks. Why not standardize on Exide and save money?

222 bumps per minute on a special "bumping machine," hour after hour for three days. Each battery tested receives 999,000 smashing blows—a combined force that would hurl a giant locomotive many feet in the air.

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COMMERCIAL TYPE BATTERIES

With Mipor and Slotted Rubber

"MIPOR," Reg. U. S. Pat. Off.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia

The World's Largest Manufacturers of Storage Batteries for Every Purpose

Exide Batteries of Canada, Limited, Toronto

A TRUCKING JOB THAT'S TOUGH!

A PICTURESQUE description of a fleet operation which specializes in extremely heavy-duty hauling. . . . And some of the maintenance methods which make possible their rendition of efficient service.

SAY "Belyea" (Bell-yay), in Los Angeles and the Southwest, and you have spoken the word for original, hardboiled trucking that bars no holds with tough jobs, with man, beast, weather, or just plain hard going in rough country. They know that there about the Belyea Truck Company, and they usually turn to Belyea for the hard and heavy stuff.

You have to visualize the kind of country there is around Southern California and forget the easy going on paved highways in other localities, to get an idea of what this kind of trucking is all about in these parts. Long, hard hauls into the oil fields anywhere from twenty to two hundred miles away, with loads of pipe or the like weighing from 40,000 to 60,000 pounds, across country on whatever roads there are. Sometimes on no roads at all, the big, hardnosed trucks making their own trails over the muddy hills. Tires, in operations of this type and magnitude, have to stand the most severe tests of service in the world, it is believed.

An Interview with

Brynn Belyea,

Belyea Truck Company, Los Angeles, Calif.

Week-long treks into the desert, or through the mountain country, to the far scene of a gigantic bridge-construction, water project or dam site; on all the highways or dirt roads or trails leading out from Los Angeles into the rolling valleys, rugged foothills, or seared desert wastes that make up the raw southwest of the real Southern California, the hundreds of huge rolling pieces of the Belyea Truck Company are seen daily making their way with dogged persistence to the point of delivery.

They radiate in a widening fan from the great headquarters yards out on Alameda Street. The big open circular court inside, completely enclosed by plants and shops, suggests an industry in itself. Shops, all kinds—tire shops, machine shops, repair shops, electric welding shops, foundries, warehouses, blacksmith shops—the "home ranch" of one of the greatest arrays of heavy-duty general hauling equipment in the Southwest. Some ten acres of it there, with four other yards in this far-flung organization.

Giant cranes rear long arms toward the sky, a long line of empties, husky trucks and trailers, rumble in from an all-night run, heavy truck cranes crawl out to their jobs, a big 'semi' rolls across the court with a load. It slows down for a moment's stop before the traffic office. One of the men there asks:

"What's the weight you got on there, Al?"

"Oh, not so much. About 17 tons, or seventeen an' a half. Between 35,000 and 36,000 pounds."

You stare at the load and wonder what a *full* load would weigh! They were hauling wood pulp from San Pedro to the mills. That stuff weighs down heavy.

You may also wonder at the punishment which tires must have to take from those big bulldogs, trailers, and truck cranes, with their gigantic loads. A tire has to be *good* to stand up and take it on a job like that, you say. And you are right.

When the huge glass disk which is the most valuable "hunk of glass" in the world—the "eye" for the famed 200-inch astronomical telescope to be placed atop Palomar Mountain—arrived in California after its journey westward in a special car, it was the Belyea Truck Company that handled the extremely vital job of trans-shipment from the railway to the California Institute of Technology. That last overland haul was just as important as the' rail journey. No slip in judgment could be risked. An expert, no less, had to be called in. The expert was the Belyea Truck Company.

When a mammoth kiln and other pieces in a hundred-ton shipment of equipment arrived in Los Angeles recently, it was the Belyea Truck Company

which was selected to transport the load to the Palos Verde Hills. The one kiln alone was one hundred feet long and occupied the full length of two sixty-foot railroad flat cars. It weighed sixty-three and one-half tons. Every piece of Belyea's equipment on this job had to function perfectly every second —in the complicated loading, unloading, and on the grades, pitches and turns of the hills. Photographers, movies and newspapers got the whole story, of course.

One of Belyea's difficult trucking jobs—loading the "eye" for the largest and most expensive telescope ever made.

The hauling of millions of feet of cast-iron pipe is an industry in itself in California, involving many technical problems. Pipe-lines are often laid across virgin territory and pipe must be delivered trenchside. Meeting such requirements is another big job. Belyea specializes in it and this outfit never fails to deliver the pipe to the line. When their trucks go with a 20-ton or 30-ton load for the oil fields, they *go* there, regardless of roads or the lack of them.

Transporting heavy machinery, oil tanks across sand and mud, steel supplies, boats (special equipment for the latter)—anything that must be hauled goes successfully through the Belyea mill. Once they hauled the sixty-ton "Founders' Rock" more than a hundred miles from its original site to the University campus. They moved a gigantic rubber tree, roots and all, without damaging it. They removed a "mile" of 50-foot palm trees to a new home. They even moved a whale!

A whale that weighed more than a ton for every foot of its length. It was 62 feet long and weighed 65 tons! This mammoth of the sea had been harpooned off San Clemente Island, or about 80 miles offshore, after a seven-day chase. Even after the big female was mortally wounded, her mate tried to save her life at the risk of both his own and that of the hunters. The killer boats got quickly away from that place.

The female killed was the largest whale in these waters, and the largest ever exhibited out of water. The moving job was simply to pick up this 65-ton whale from the barge at San Pedro and take her inland. But a special structural steel frame or carriage had to be built under the full length of the huge creature. After that, this whole carriage had to be lifted with a great derrick. But it was done.

The whale was finally deposited on two of Belyea's 50-ton trailers, and the big parade got under way, an exciting novelty not only to the eyes but also the noses of all along the way. As many times before in Belyea operations, folks read about it in their newspapers.

There were some three hundred and sixty pieces of rolling equipment in the Belyea fleet at the last count, although constant additions make it closer to four hundred now, with a fleet of thirty-five passenger cars.

Maintenance departments are manned by specialists, the minutemen of their professions, and the shops run like clockwork. They have to. For example, the tire department does not wait for tires to be brought in. Every morning around five or six o'clock, Lawrence Holt and his men go over every tire in the yards. Mileage is necessarily limited on all tires, both new and retreads, under the ceaseless and terrible beating they get, but quality has been proved by averages. Tires showing signs of baldness are taken off and retreaded, then put back into hard service. New tires go on drive wheels, retreads on front and other wheels.

As some of the semi's have as many as 16 tires, trucks about 10, trailers 12, not including spares, there is an average of approximately 4,000 tires or more rolling every day, among them a veritable army of retreads continuously on the march.

One of the largest stocks of tires in the area is kept on hand at the Belyea headquarters. New tires of the best quality are purchased, all extra ply. On the heavy equipment, sizes include 975-20, 975-24 balloons, 12-ply; 32 x 6 and 32 x 7, 12-ply; 36 x 8 and 40 x 8, 14-ply.

While on the subject of tires, it is interesting to note that approximately half of all the tires on which these big vehicles roll are retreads. One of the only exceptions to their rule of performing all service work

(*Please turn to page* 22)

Here is an eighty-ton load that is typical of the trucking jobs tackled by Belyea Truck Company. . . . The picture at the head of this article shows another difficult operation in mountainous country. . . . This is termed as an "easy" job, compared to some of the hauling which the Belyea fleet is called upon to perform.

in their own shops is "retreading", which is farmed out to a local retreader.

Quite significant is the fact that retreads, the product of a comparatively new industry, have become a part of the operating equipment of this operation, said to be one of the largest of its kind in the Southwest. It should provide a grand testimonial—the fact that Belyea Truck Company, specialists in equipment with experience of almost a quarter of a century, have decided that retreads offer a definite and valuable place in their operating picture. And the particularly tough aspect of the work they do, might be kept in mind.

Another relatively new industry which Belyea Truck Company patronizes is the Diesel engine. A number of Belyea's Diesel-powered trucks are hauling 15 and 20-ton loads of drill-pipe, for example, in oil-field operations. The following interesting figures, recently obtained, should be of more than passing interest in this connection:

On one of their runs between Los Angeles and Taft, Calif., approximately 130 miles, their Cummins-powered trucks, when hauling 21 tons of payload, consume 32 gallons of fuel, we are told. The engines are 150-hp. bus type units.

Over exactly the same route and hauling the same load, their gasoline-powered trucks burn 70 gallons, they inform us. The engines in their gasoline-powered trucks develop approximately 100-hp., as compared to the 150-hp. of the Diesels. Not only do the gasoline-powered units consume twice as many gallons of fuel as do the larger Diesel units, but they also require four additional hours to cover the same trip.

While operators of the Diesel-powered trucks are not permitted to exceed the state speed limits, nevertheless it is interesting to note that Belyea's Cummins-powered units are capable of 61 mph when fully loaded and on level highway. This is considerably in excess of the maximum speed of the gasoline-powered trucks with the same load, and the abundance of power from the Diesels is what makes possible the much faster schedule between Los Angeles and Taft.

Belyea operates a number of these Cummins-powered trucks. Again we say, "Orchids to Belyea" for their progressive and pioneering spirit in adopting new automotive applications after proving, by test, that they are satisfactory. But let's get back to the maintenance angle, and finish the story.

The company has 24-hour, day-and-night service facilities in its shops, on tires, repairs, lubrication, brakes, etc. They are, as they claim, always "ready for anything".

An accurate time chart is kept of every piece of equipment for every hour or fraction of an hour in the day at the Belyea headquarters. Similarly, when a tire is placed on a truck, it is charged out by inter-department requisition to that truck, trailer, etc. Each tire has a special Belyea number branded on it when first put into service. In this way, a dependable record can be kept of tire-life in general, though the exigencies of such a service, the thousand and one emergencies that cannot possibly be foreseen and can only be met by being equipped and "ready for anything", make precise, day-by-day figures possible.

BELIEVE it or remain unconvinced. What looks like the mouth of a mountain-cavern in this picture is, in reality, Belyea's transportation job in transporting a 65-ton whale, 62 feet long—a whale that weighed more than a ton for every foot of its length. . . . Truly a "whale" of a job. . . . Note the special carriage which had to be built for the purpose.

You would have to meet Mr. Brynn Belyea, head of the company, to appreciate the huge task he faces. Here, there, everywhere, he is knee-deep in every important job going on. His is the robust personality at the heart of the organization. He make decisions fast, but he knows the facts first. If any of his equipment were not the best for the purpose that could be obtained, out it would go in a minute! . . . The entire Belyea organization is happy in the fact that they are rendering a good service to many industries.

What is said to be the world's largest trailer, from the standpoint of capacity, was recently delivered to The Belyea Truck Company by the Fruehauf Trailer Company of California. (This unit was illustrated and described in our last issue.)

About the first load to be hauled on this new Belyea trailer was an electric transformer weighing 82 tons. This was in the nature of an "experiment", which worked so well that the transformer's "daddy", weighing 101 tons was tackled next.

These transformers were hauled for the Los Angeles Bureau of Power and Light, the distance in each case being about six miles.

The tractor used for hauling this large-capacity trailer is an especially built one, designed by Belyea engineers. It is powered with a Cummins HB-6 Diesel engine and drives through a Sterling dual chain-drive, four-wheel rear-end.

Belyea Truck Company, of course, takes many special precautions in handling big jobs like the ones you have read about in this article. This Company is a large user of Diesel engines and have constructed a number of special heavy-duty tractor-trailer combinations around these engines.

THE ORIGINAL FOUR-WHEEL-DRIVE TRUCK

POSITIVE TRACTION...

Insures Outstanding Performance

POWER — scientifically distributed over four wheels — instead of only two. That's the engineering principle — the positive traction — that has singled out FWD for outstanding performance — enduring service — unusual economy.

Stress on each driving axle is reduced by half. 100,000 miles and more per set of tires is not unusual. Only 11.8% of the developed power is lost in friction — an amazing performance indeed!

The FWD is a safer truck. It is more economical to operate. It will serve you longer. Not because we say so. But because of exclusive FWD engineering superiorities *which are susceptible of proof.* In the world's toughest trucking — in cross-country oil field and utility construction — in almost impassable timber lands—thru Northern Snow Drifts that would baffle anything but *Four-Wheel-Drive* construction — *Positive Traction* has given FWD an enviable reputation for outstanding performance.

Controlled Power

FWD CONTROLLED POWER GIVES YOU

- Greater Safety
- Faster Service
- Greater Dependability
- Wider Range of Operation
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THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WISCONSIN
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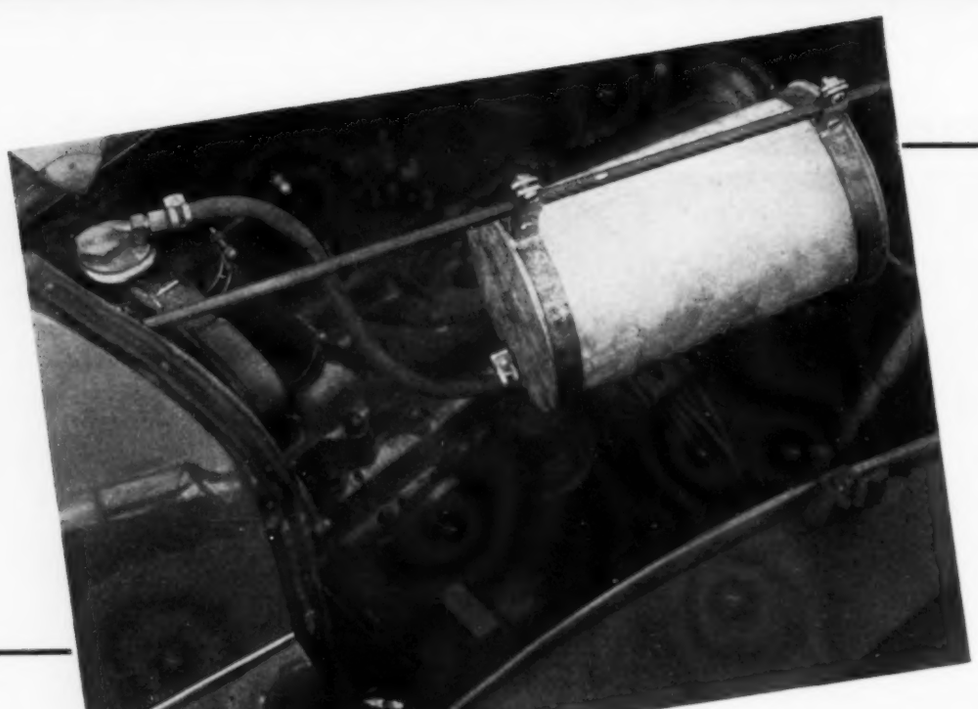
FOUR-WHEEL-DRIVE
TRUCKS

THE SAFEST TRUCK ON THE HIGHWAY



FLEET SUPER DEVELOPS AN AUXILIARY DEVICE TO CATCH WATER OVERFLOW

Radiator Condenser-Tank Cuts Anti-Freeze Costs

•

By F. O. Lewis,

Superintendent of Transportation, Dayton Power & Light Co., Dayton, Ohio

DURING the past several months considerable work has been done here at the Dayton Power and Light Company in attempting to devise some sort of tank that would enable us to maintain better control and to make it possible to use an alcohol-base anti-freeze in the cooling systems of our equipment operating above 160° F.

We started out by hanging a one-gallon tank to the radiator stay-rod and connecting this to the existing over-flow pipe. This we found was not very satisfactory, due to the fact that the over-flow pipe on some cars is very difficult to get at. Also, we were not able to maintain an air-tight seal with the regular radiator filler-cap, this being absolutely necessary, as the function of this device depends upon the vacuum created in the radiator.

Our next step was to design and build a special tank and to work out a simple means of replacing the regular filler-cap of the radiator in order that an air-tight connection with the tank could be made. The final assembly, as worked out, is shown in the above photograph. After installed, it is necessary to plug up the regular over-flow pipe of the radiator, at the most convenient point.

The purpose of this radiator-surge or condensing tank is to prevent the loss (by evaporation, surge, boiling-over, etc.) of radiator-water and valuable anti-freeze solutions. The tank is made of 26-gauge galvanized iron and has a capacity of about five quarts. It is mounted as shown in the above photograph, and is vented by drilling a small, 3/16-inch hole at the top of the rear end. At the bottom of the front end, a short length of copper-tubing is soldered-in, to accommodate the connecting hose.

In place of the regular filler-cap of the radiator, a special flat brass cap is used, soldered fast to the neck of the radiator. This is made of ¼" stock, and is drilled and tapped to take a ⅞-inch filler-plug, and a ⅛-inch L-fitting with a short length of 5/16-inch copper tubing attached.

A suitable length of rubber hose is slipped over each of the short copper tubing ends, as shown, and clamps are used to make everything air-tight. A spark-plug gasket is used under the ⅞-inch filler-plug, to assure tightness.

The operation of this condensing tank needs little explanation. As the engine of the car or truck warms up, the radiator liquid which formerly went out through the over-flow pipe, now is caught and condensed in the tank. Inversely, when the engine is stopped and begins to cool off, the liquid is drawn back into the radiator, due to the vacuum created by contraction on cooling.

Because this device makes possible the use of an "alcohol-base" anti-freeze, it especially appeals to the Company. Once installed, the surge-tank will become permanent equipment, for both summer and winter use, since it enables us to maintain better control of our radiator operation by using soft water and a rust-inhibitor. This should prevent the formation of rust, corrosion and lime-scale, and should make a decided

(*Please turn to page* 68)

WEED American
BAR-REINFORCEMENTS
. . . more than
DOUBLE
your
Chain Mileage
● Yes, those double-welded Bar-Reinforcements not only prevent forward, back and side skids but they also provide twice the metal to wear through. Moreover, that metal is tough, wear-resisting "Weedalloy," especially developed for WEED Tire Chains. That means still *more* mileage.
Thus WEED American Bar-Reinforced Tire Chains give you greater safety—*more* than *double* mileage. That's why they are known as "The Best Buy in Tire Chains."
Standardize on WEED Americans and cut your chain costs.
AMERICAN CHAIN & CABLE COMPANY, Inc.
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In Business for Your Safety
SEND FOR FREE CHART
25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.
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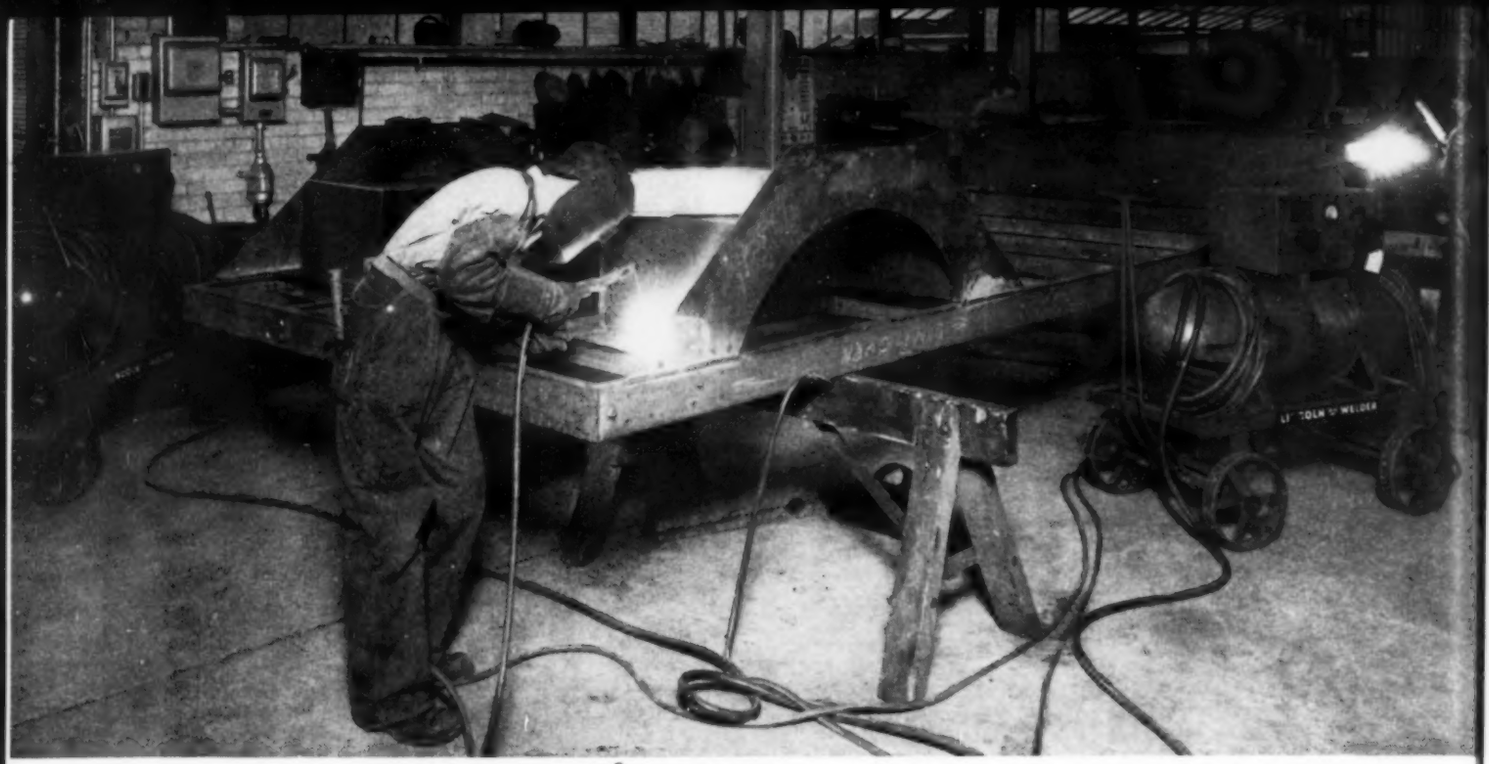

ELECTRIC WELDING

AND SOME OF ITS MANY USES IN THE FLEET SHOP

(*A "How-We-Do-It" Article*)

IN LINE with the increasing demand on the part of our readers for more information on electric arc-welding, an attempt was made recently to secure a first-hand "experience story" directly from a fleet operator's shop, resulting in a visit to the garages of The Motor Express Company, Cleveland, Ohio.

The Motor Express Company maintains 24-hour service facilities for its fleet of trucks, tractors and trailers. All equipment is regularly inspected and when in need of repairs is turned over to the garage, just as in your operation and mine. Through the courtesy of Mr. V. A. Reed, manager of their maintenance department, this interesting treatise on their own uses of electric-welding in fleet maintenance, and also the excellent photos which accompany this article, were secured.

The Motor Express Company shops are equipped with a 200-ampere, motor-generator type, electric arc-welding set, which can be seen in some of the pictures, and the number of uses which they have found for it is quite surprising, according to Mr. Reed. This company, immediately after obtaining the welding set, discovered that in addition to serious breaks which it repairs, the possession of such equipment resulted in their paying more attention to the "less serious" jobs, which formerly were "let ride". The following paragraphs will try to "let you in" on their own story as to how they put this versatile piece of shop equipment to good use, in order that it will more than earn its keep.

Let's start right in on the more frequent jobs, especially since this is the season for them—we are referring, of course, to cracked cylinder-blocks and heads. Next in line will be broken chassis frames, torn bodies, bumpers, fenders and many smaller but important parts, such as spring-shackles, brake-shoes, lamp-brackets, etc. However, these will be taken up later; let us stick to cylinder-blocks and heads for the present and see just what is being done in this direction.

Repair of damaged cylinder-blocks and heads by electric-welding is done in the shops of Motor Express Company, without dismantling the engines—at least in all but extremely bad cases. The photograph, Figure 1, was snapped while they were right in the act of welding a block, and we hope it comes out clear enough for you to see the weld.

Cylinder-block and head welding work is generally one of three types in the Motor Express Company fleet—(1) Small exterior cracks which may be readily welded; (2) Large cracks which require some preparation work; (3) Unusual cases, such as when the block is broken and one or several pieces are knocked out. Repairs of this type are generally made with the following equipment: An electric-welding set; a supply of electrodes for welding cast-iron; a hammer; a diamond-point chisel; a wire-brush; a hack-saw; and some means of readily moving the casting and turning it around into various positions.

An Interview with
V. A. Reed,
Manager of Maintenance
Motor Express Company,
Cleveland, Ohio

For repairing exterior cracks of this kind, the job is properly prepared. All foreign matter is cleaned off the parts to be welded. The presence of any oil or dirt will cause "spattering" and will interfere with obtaining the

very best results. To insure a tight job, a small sealing bead of weld-metal is deposited.

The Motor Express Company reported that for only 50 cents, (40 cents for labor and 10 cents for operating the welding machine) it often mends a leaking crack in the cylinder-block of a large engine. For larger cracks, one method which has proved helpful is to "vee" out the crack, either slightly to expose clean metal or to make a "vee" the complete depth of the crack and then apply the sealing bead.

When the work is properly prepared, cast-iron, shielded-arc electrodes are used. It has been found that an electrode with a steel base, gives a solid weld on cast-iron of greater tensile strength than the cast-iron itself. This type of electrode gives a good bond or union with cast-iron, and due to the low current which can be used on it, the hardening effect usually present along the line of fusion is materially reduced, making a weld which is easily machineable.

Before starting to weld, the electrode is made positive, and the work is made negative. Approximately 80 amperes and 23 volts are used. The proper setting is obtained by using low current and high open-circuit voltage.

The welding is done very intermittently and not over a 3-inch bead is laid down at one time. Immediately after each bead is applied, it is peened lightly, then thoroughly cleaned and allowed to cool somewhat before the next bead is deposited. Great care is taken to see that the work is always *clean* and it is not allowed to get too hot.

Best results will be obtained if the casting is placed so that the welding can be done in flat position.

Where a single piece is broken out, it is helpful to tack-weld an electrode to the piece. This will provide an easy way of holding the piece in place while tacking it in position. Although this "handle" will be found most useful on corners, it can also be used advantageously in other positions.

In severe cases of cylinder-head damage, such as when a piece has been broken out, it is necessary

Figure 1—Repair of damaged cylinder blocks is done by electric welding in the shops of Motor Express Company. . . . In most cases this is done without dismantling the engine.

that the broken piece or pieces be carefully fitted together. Here again, it is essential to have the parts absolutely clean. If the several pieces can be readily fitted together, they are vee'd, tack-welded together, and then welded into one solid piece. The cylinder-block is also vee'd where the re-assembled part is to be applied.

Where several of the broken pieces are lost, it is generally advisable to weld-in a single iron plate instead of trying to patch the broken parts together by fitting new pieces to replace those lost.

In case a large crack must be repaired, it may be necessary to fit steel-inserts. When this method is adapted, the cylinder-block is first vee'd, and the steel-inserts, also vee'd, are welded to the block. The reason for welding the inserts to the block first is to reduce the possibility of stresses developing during the welding. After the inserts are welded to the casting, the welding is completed by making the welds, joining the inserts together.

(*Please turn to page* 28)

Figure 2—Welding a broken trailer frame by means of the electric arc. The body was not removed from the frame, as you will note. . . . A steel plate was welded to the break in a few hours.

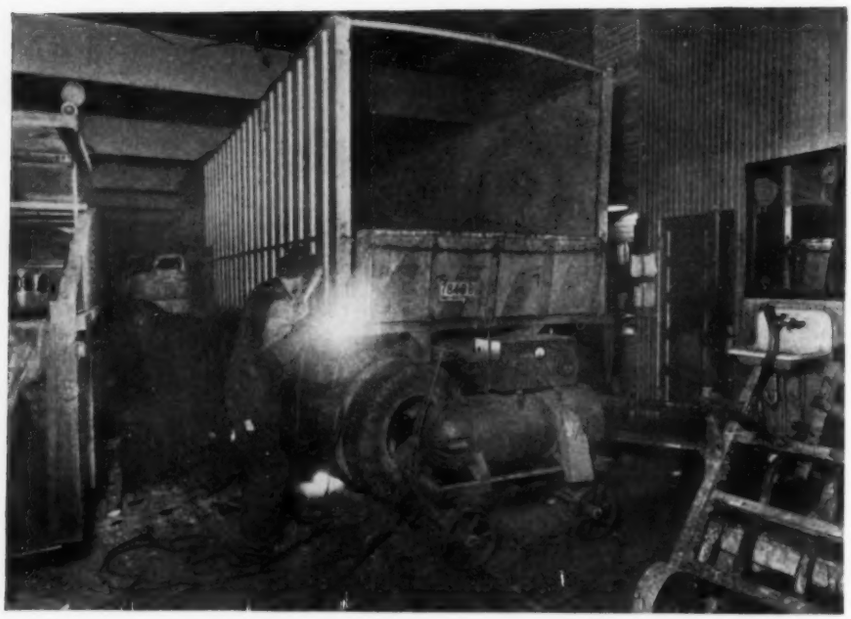

Figure 3—Repairing a damaged corner of trailer body by electric arc-welding. . . . Note the complete portability of the welding set, which is of the motor-generator type. . . . The job was back on the road within an hour, we are told.

When a break runs into a machined surface as in the case of a gasket face, the broken pieces are set so that they extend a little above the original surface. This allows grinding the part down to make a good gasket fit. Care should be taken to see that this part does not extend too far above the surface, otherwise a great deal of grinding or filing will be necessary, in order to bring the repaired surface down flush with the machined face.

When welding a good grade of casting, no difficulty should be encountered if the work is clean and if proper equipment is used. In this connection, it should always be remembered that no electric-welding equipment, no matter how efficient or suitable, will compensate for dirt or oil on the work. One method of being sure that all oil is driven out of the casting is to frequently heat ahead of the weld. This, however, is not practical in all cases.

In order to avoid the chance of pin holes, which result from failure or inability to clean the work properly, it is sometimes advisable to apply sulphur to the weld as soon as the arc is stopped, and melt enough to seal any pin holes which might be present. This application of sulphur is necessary only when the condition of the base metal prevents absolutely tight welds. Good sound welds can be made on clean cast-iron. This is why it is so important to have the work absolutely clean before beginning to weld.

Due to severe services to which fleet equipment is often put, operating under heavy loads in all sorts of weather and over all sorts of roads, sometimes it will be necessary to repair a broken frame, which was the case recently at the Motor Express Company garage.

One of the main side frames of a large trailer, used in hauling new automobiles, broke just in front of the rear axle. The frame was broken completely across from top to bottom, appearing as though it would require a long complicated procedure to repair it. With electric welding, however, the job was done with "the greatest of ease." As a matter of fact, the body was not even removed from the frame.

The work consisted simply of cutting a piece of steel plate, approximately a quarter inch thick to conform to the frame and extending about 18-inches on both sides of the break. This steel plate was electrically welded to the frame, completely around its four edges. The job required only a few hours and the trailer went back into service the same day. Figure 2 shows the welding of the broken frame.

Frequent repairs are necessary to commercial trailer and truck bodies, due to wear-and-tear of service, collisions, accidents, etc. While the author of this article was talking with Mr. Reed, maintenance manager of The Motor Express Company, a trailer body was wheeled into the shop. Parts of the body, in need of repair, had been previously indicated with chalk marks made by the inspector.

These consisted of a hole punched in the side, a loose end-gate, (See Figure 6,) and several places where the side plating had pulled loose from the framing.

(*Please turn to page* 30)

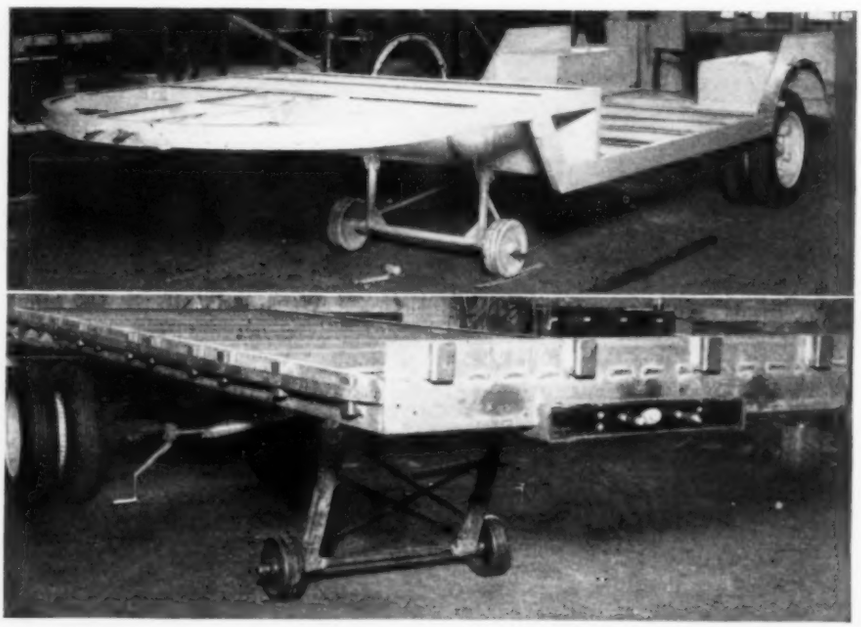

Figure 4—These two trailer frames were completely fabricated by electric-welding. . . . Claims are greater strength and rigidity, decreased weight, greater economy of fabrication and more pleasing appearance. (Ed. Note: These trailers were NOT made in the shops of Motor Express Company.)

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AUTOMOTIVE

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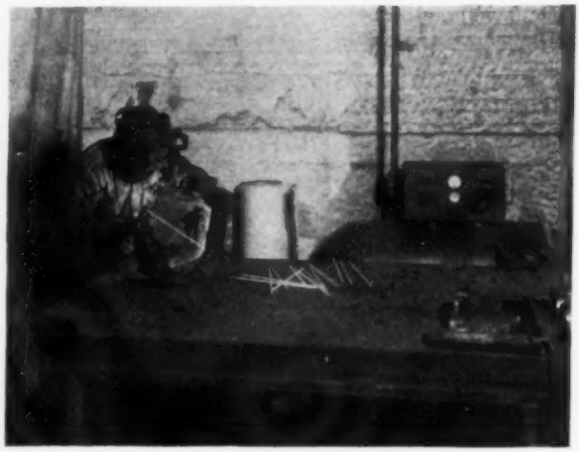

Figure 5—Repairing a cracked brake-shoe from one of the big trailers used in the Motor Express Company's fleet at Cleveland, Ohio, using the electric-arc.

In the case of the hole, a small piece of steel was placed over the opening on the inside and electrically welded from the outside. The end-gate, rusted and worn loose, was made tight by welding.

At one point (a lower corner of the body just ahead of the wheel recess) the mud-strip had pulled loose. It was fixed by prying it back into position and arc-welding it in place. A corner of a trailer body being welded is shown in Figure 3. The balance of the photographs accompanying this article have captions which are self-explanatory.

Small parts of trucks such as brake-shoes, spring-shackles, etc. are readily repaired by arc-welding in the Motor Express Company shops. In Figure 5, the welder is shown repairing a cracked brake-shoe; in Figure 7 he is shown welding a broken plate which, by means of U-bolts over the front springs, holds the front axle of the truck in place. This particular plate was broken in two and fused back into a single piece by electric-welding, using a shielded-arc type, mild steel, arc-welding electrode.

Repairs such as these are made at a cost of only a few cents with electric-welding, according to Mr. Reed. This method makes the repair permanent and besides saving the cost of replacement, it saves time which would otherwise be spent waiting while the replacement part was obtained, or while a new one was being made.

Only a few typical examples of repair jobs done by electric-welding on trucks and trailers in the Motor Express Company fleet have been illustrated and described here. Many more could be included, space permitting, the fact being that whenever a part breaks, it is repaired quickly and economically by welding.

Welding with the electric-arc is purely a mechanical process. Its use can be learned readily and any garage mechanic can become skilled in using it after a moderate amount of practice.

To arc-weld, the operator places an electrode in a holder which is connected by a cable to the welding machine which in turn is grounded by means of another cable to the work being welded. Then he sets his current-control to provide the proper current for the work being done, lowers his face shield, touches the tip of the electrode to the work and deposits metal, which mends the break or crack.

The economies of electric welding can be obtained with a minimum of equipment. All that is necessary is an arc-welding machine, a supply of electrodes, and a few miscellaneous accessories including cable, electrode holder, protective shield, (recommended in place of goggles for steady work), and gloves.

Arc-welding machines are made in a variety of types and sizes. The motor-generator type seems to be the most widely used. It is a complete unit, provides high quality welds at low cost and is moderately priced. The electric-welder shown in the accompanying illustrations is one of the motor-generator type, of popular make. This particular welding machine is a 200-ampere unit.

Smaller machines are, of course, available. A 150-ampere model, requiring space less than 2½ feet square, was recently introduced by a leading manu-

(*Continued on page* 68)

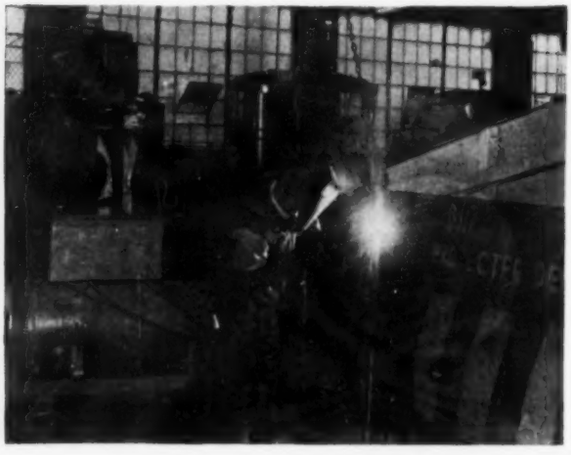

Figure 6—Loose end-gate and its hinge-bracket are being repaired by arc-welding in this photograph. . . . The welding set can be plainly seen at the left.

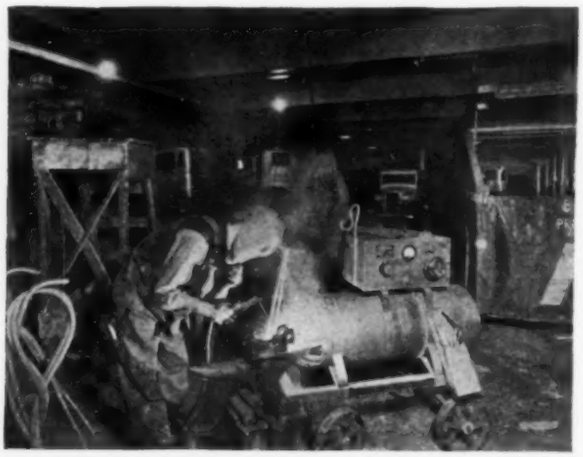

Figure 7—Here the operator is welding a broken axle-plate. This plate is one of those used with spring U-bolts, for holding the front axle in position.

THE THRIFT CARRIERS FOR THE NATION

NEW 1938 CHEVROLET TRUCKS

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FOUR GREAT LINES

of half-ton, ¾-ton, 1-ton and 1½-ton trucks . . . 5 wheelbase lengths . . . with a wide variety of models to suit your haulage needs . . . all of them big, rugged, dependable truck units with Valve-in-Head Engines, Perfected Hydraulic Brakes and Extra Sturdy Frames . . . designed and built to give you more miles of service at lowest cost per mile.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICH.

NOW ON DISPLAY—ASK FOR A DEMONSTRATION
SEE YOUR CHEVROLET DEALER

« Here Is R.E.A.'s Newest Pick-Up Unit »

KEYED to present-day trends in automotive design is this latest addition to the fleet of automotive equipment operated by Railway Express Agency, Inc. They call it their new "Streamliner" and they designate it (for their own purposes of accounting, etc.) as No. 19221.

This impressive new unit, said to be the "last word" in automotive design, comprises a body of a special design built by The Wayne Works, body builders, the idea being to meet the present requirements of Railway Express Agency's widespread transportation business.

Of typical cab-over-engine or overall design, the new unit is mounted on a 136-inch International Harvester cab-over-engine chassis. Although its rated capacity is 1½-tons, the truck body has 660 cubic feet of space, permitting the handling of up to three tons of express matter when required.

Another notable feature of No. 19221, in addition to its general efficiency and economy of operation, is its ease in handling, even in the heaviest of city traffic. The body is equipped with a large double door on the right side, as shown in an accompanying illustration, with an opening of 57 inches.

Door on curbside, 57 inches wide, permits quick loading and unloading at sidewalk.

This enables the operator to load or unload easily at the curb and also permits him to get to and from his seat and the sidewalk through the body quickly. In effect, the driver thus does his business right from his own "warehouse." The rear door is of a double-articulated type and in both cases a new kind of keyed lock is provided.

From time to time, in the usual course of its business, Railway Express Agency is constantly experimenting with new and different types of bodies, especially for pick-up and delivery work. This attractive "Streamliner" looks to the Editor of this publication as a design that will "stick". It is probable that a considerable number of these jobs will be constructed and put into service in the near future.

Fleet operators in all lines of business are cordially invited to send us pictures and complete descriptions of special body designs. The Editor will be glad to hear from you and especially requests *complete* descriptions of same.

Wichita Transportation Corporation, Winner of Bus Transportation Silver Award for maintenance efficiency in city operation, standardizes on Packard 440 ignition cable.

PACKARD 440 CABLE WRITES

A Continued Story of Savings

Here's a story of savings that goes on day after day ... month after month ... in every state in the nation. Maintenance men have discovered that there's more MPR (miles per replacement) in Packard 440 cable —and the good news has traveled fast! Bus lines that had to replace the old cotton-braid-and-lacquer spark plug wires every 10,000 or 15,000 miles have eliminated *at least* one replacement out of three with Packard 440. Some have eliminated as many as three out of four, and *all* agree that the secret-formula, inorganic sheath which distinguishes Packard 440 is one of the maintenance sensations of the year. Choose Packard 440 for your equipment! Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard

REG. U.S. PAT. OFF. TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

Tire Experience *in a* Department Store Fleet

OUR SURVEY on Tire Regrooving, conducted by this publication among fleet operators several months ago, has revealed the fact that rather than regroove tires in their fleets, a definite number of fleet men believe that retreading or recapping, when tires become smooth, is the more economical procedure.

Feeling, therefore, that the subject of Tire Retreading might be a timely one, we searched around to find an operator who is having considerable of this rebuilding done to his tires. Our search was successful, for we came across a fleet in Chicago—the one operated by The Boston Store—and our correspondent found Marshall I. Lewis, Maintenance Superintendent, willing and rather enthusiastic to tell of his experiences with retreading and recapping.

The Boston Store is one of Chicago's important department stores, operating a fleet of some 123 vehicles—trucks, cars, tractors and trailers. As far back as thirteen years ago, Mr. Lewis became convinced that he could cut his tire costs by retreading good carcasses when they had worn smooth. He started in a small way, at that time, to use retreaded tires.

Naturally, Mr. Lewis, as well as other truck operators, experienced difficulties with the use of the type of retreads produced at that time. But he did not do as some operators at that time did—swear off retreads for life. He saw that retreading was a new business subject to the difficulties encountered by any new industry. He believed that retreading operations would improve as the business developed. Having such faith, he continued to use retreads and kept his eyes open to new developments in retreading processes.

Today the Boston Store fleet under the direction of Mr. Lewis is equipped with a rather large percentage of retreaded or recapped tires. Tire costs have been reduced to the point where costs are exactly 7/10 of a mill per tire mile! Mr. Lewis has been able to do this because he was willing to give his time and attention to tire costs and maintenance.

He has developed a complete system of tire records by means of which he can know at a glance, exactly the record of performance made by every tire. This record starts with the purchase of the new tire. Entry of the tire brand, price and tire number as well as the number of the truck on which the tire is mounted is made on an office file card as well as a garage record card. The garage tag card (illustrated on this page) also tells the wheel position on the truck or trailer on which the new tire is mounted.

After the original cards are made out, further entries are made whenever a tire is demounted for any reason, whether it is for puncture, blowout or wear. The reason for demounting the tire is entered on the garage tag first and later transferred to the office record card.

When a tire is sufficiently worn to need retreading, entry is made on the office card of the exact mileage coverage by the tire. The name of the retreader and the cost of the retreading or recapping operation are also entered. In this way Mr. Lewis *knows exactly* the mileage rendered by every tire in service. The advantages of this system are obvious, for it not only furnishes the record of the individual tire but also gives a close check on the quality of work being done by the various Chicago retreaders to whom The Boston Store gives its retreading work.

Because the system he uses is so exact, Mr. Lewis has learned several things about the use of retreaded tires that should be of value to

(*Please turn to page* 69)

TAG NO. 221-2

Name of Tire U.S. Heavy Duty Balloon Casing

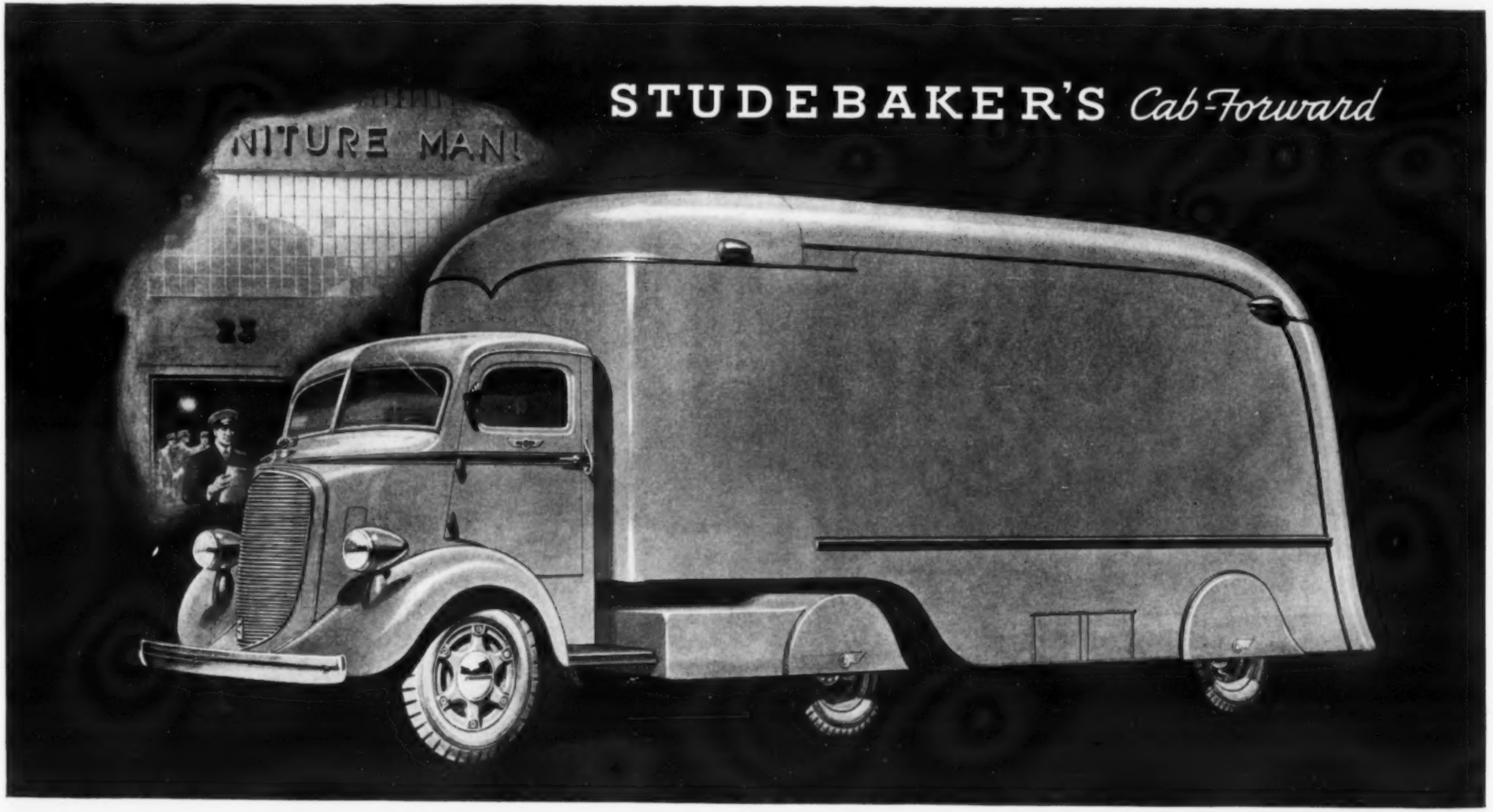
Purchased from Commercial Tire Co. Date 12/19/32

Size of Tire 750/20 Tire No. U4V-15434

Invoice No. 47730 Our Order No. B-166068 Cost

Remarks			
R.F.	Applied	12-20-32	
	Removed	10- 3-33	26,761 mi.
Recapped	Applied	10-17-33	
	Removed	1-16-35	37,272 mi.
Retreaded	Applied	1-22-35	
	Removed	6- 8-36	38,326 mi.
Retreaded			

Tire Record Card as used by The Boston Store. . . . One is kept for every tire. . . . Note that in this case the tire was first recapped and then retreaded.



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STUDEBAKER

in the low price field

Four new popular-priced Cab-Forward chassis, ranging in vehicle gross rating from 12,000 to 20,000 pounds (gross train rating from 17,500 to 32,000 pounds), make Studebaker's leadership in this ultra-modern truck type more pronounced than ever. Improved in space-saving and time-saving maneuverability! Smarter looking! New heavy-duty 6-cylinder truck engines —the most efficient known to the industry! Hydraulic brakes of most advanced type! New driver comfort—roominess, visibility, easy steering! New accessibility for low-cost maintenance! New value from end to end of these great trucks—the finest transport units in Studebaker's eighty-six years.

THE STUDEBAKER CORPORATION
Truck Division South Bend, Indiana

1—CUTTING GREASE FROM RUNNING-GEAR

BOTTLER PAINTING

FLEET EXECUTIVE, SUPER, PAINTER KEEPING "PAUSE THAT REFRESHES"

By Allen A. Johnson,
Secretary-Treasurer,
Crawford Johnson & Co., Inc.
(Coca-Cola Bottlers)
Birmingham, Ala.

YOUR EDITOR has asked me to tell all about how our fleet of trucks is kept so good-looking and attractive throughout the year. It's really very simple and inexpensive, as you will learn when you read this modest description of our refinishing procedure.

Crawford Johnson & Company, Inc., is a licensed bottler of Coca-Cola in Birmingham, Ala. In our organization we operate a fleet of some 24 trucks, ranging in capacity from half-ton pick-ups to three-ton "warehouse-type" tractor-trailer combinations.

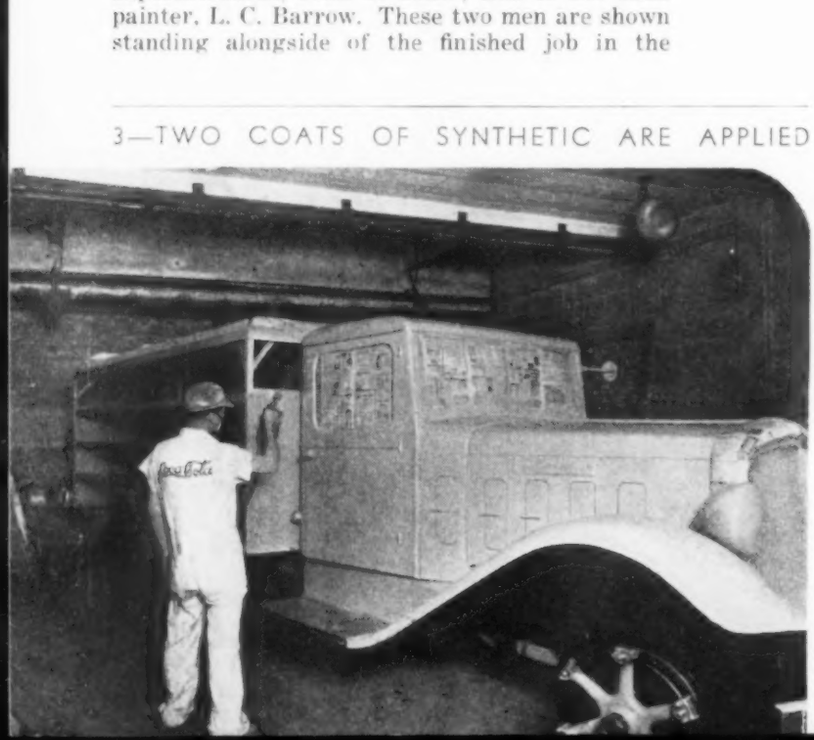
Because of the very nature of our business, both the delivery end of it and the advertising end of it are closely allied. Naturally, we always try to have our equipment look as attractive and attention-getting as possible; which is just a "natural" for us, as we take special pride in the appearance of our fleet. Perhaps it will be best to start right in and tell you all about how our painting is done.

We follow a method of truck painting which we have developed after many trials, tribulations and changes. We feel that it is the *best* one for our particular business, for the following reasons:

(1) We get a very satisfactory appearance; (2) We feel that our painting costs are in line; (3) The type of finish we use seems to have sufficient durability; (4) Only a short time is required for the entire refinishing operation; (5) Throughout the painting operation the bodies are not removed from the chassis.

In connection with this subject, it is only fair to state that we are extremely fortunate in having two men in our organization who are resourceful, intelligent, dependable, and interested in their work. I am referring to our garage superintendent, John J. Shaw; and to our head painter, L. C. Barrow. These two men are shown standing alongside of the finished job in the picture on the opposite page, Figure 4. (Mr. Shaw is at the left; Mr. Barrow at the right.) Much of the credit for the development and carrying out of our simplified painting procedure is due to the efforts of these two gentlemen. Here's how it works:

3—TWO COATS OF SYNTHETIC ARE APPLIED



All of our trucks are refinished once a year, unless they are damaged by fire or accident, when, of course, they would be immediately reconditioned. We do *not* strip off the old finish during the life of the vehicle. It is possible that some question might be raised regarding our not removing old paint. It has been our experience that if this were done, it would take much longer and would require much more labor and material, which would, of course, run up the cost of our painting operations.

In our service we have found that paint removal is unnecessary. In the past we have completely stripped down a truck, re-worked it and then repainted it. Viewed from a dis-

2—A GOOD WASH WITH CLEANER AND WATER

POPS HIS SECRETS

PULL CORK ON PAINT PROCEDURE TRUCK-FLEET BRIGHT AND SHINY

Assisted by

John J. Shaw and L. C. Barrow

Garage Supt. *Head Painter*

tance of ten or fifteen feet, we could find absolutely no difference in appearance between that truck and one which was covered with many, many more coats of paint. We have also learned that there would be no difference in the life of the new finish, whether applied directly over the old one, or on a bare surface.

In this connection, of course, it goes without saying that this condition will only obtain where a *high-grade* finish is used in the first place—one that will not crack, chip, peel, "crocodile" or show any of the other usual symptoms of a poor finish, or one that is improperly applied. Anyway, that's the way *we* do it. That's our story and we are *not* stuck with it.

In order to make sure that the data in this article would be based on our actual experience, we first looked up our records, and learned that it was just a year ago that the Federal truck shown in the photographs had last been painted. Therefore it was next in line for a refinishing job. This is a model 15-X, equipped with 162-case special bottlers' body. In preparing this story, we have followed each step through the shop, basing all factors on our actual experience with this particular unit.

Let us first divide the painting operation into three general sections: (1) Cleaning and washing of the chassis and body; (2) Repairing fenders and body; (3) The actual painting operation.

First we take the truck to the wash-pit for a thorough cleaning. As the initial operation, we clean off all grease and grime from around the chassis, axles, spindles, and any other places where grit has accumulated. Our *modus operandi* in this case is to have one of our helpers use kerosene (or suitable solvent) in conjunction with an air-gun, as shown in Figure 1. All under-the-chassis parts are worked on in this manner.

The same helper then gives the truck a complete washing with automobile soap and water, again using a pressure-gun and brush. The entire cleaning operation will require about 7 or 8 hours' time, on the average. This is portrayed in Figure 2.

We will now remove the truck to the paint shop, where it is jacked up all around, and all tires and rims demounted. The mechanical shop force will then weld any and all breaks in the body or fenders and will straighten all dents, etc. After this repair work is completed, the unit is turned over to the paint-shop.

The first paint-shop operation will be that of sanding off all rough places left by the garage repairs, and such other uneven places left by bottle-cases scraping off paint, on guard-rails, deck and other parts of the body. For this sanding process an electric sanding machine of popular make is used. Other minor scratches or breaks in the old paint are sanded off by hand.

(*Please turn to page* 38)

4—FINISHED—AND ARE THEY PROUD OF IT!

using a Number 220 "wet-or-dry" sand-paper.

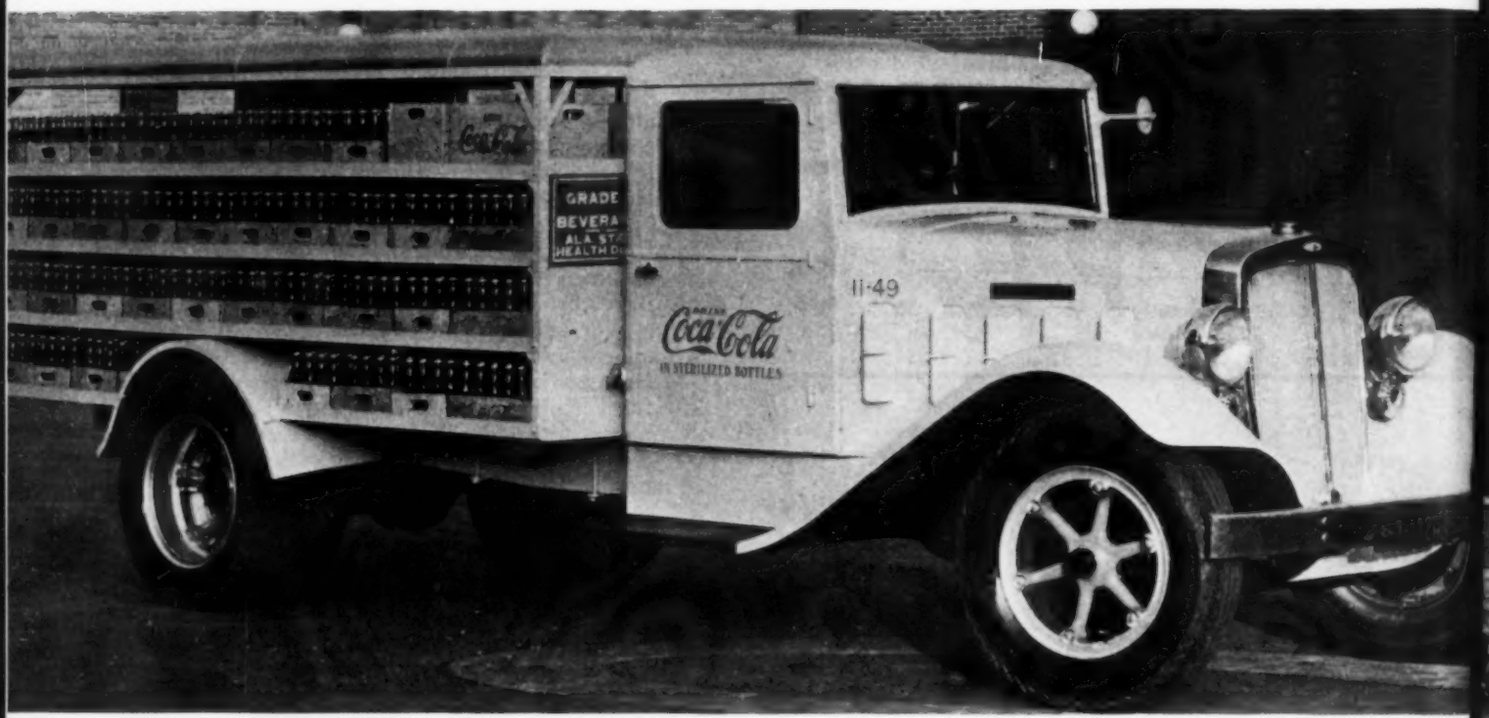
It might clarify things to point out here that it is *not* our practice to sand down the old finish *entirely*, before repainting. We only sand it down at such places as fenders and other dents which have been repaired, along the guard-rails on the decks, on scratches, etc. In other words, the new paint is applied directly over the old finish after it has been well *washed*, to remove grease, dirt, etc.

We now come to the third operation—the actual painting of the vehicle. We believe in starting at the top and working down, so we do the roof first. This is sprayed with one coat of an asphaltic-base aluminum paint, which gives us good results. It requires about five hours to dry.

a white trade-mark; on each of the doors (which are finished in yellow) we use a red trade-mark. First let's get back to the tail-gate, and spray a good coat of white all over the area which the trade-mark will occupy. Then we go to the doors and spray a good coat of red all over the area which the trade-mark will occupy on each door.

When these areas are absolutely dry, we outline our trade-mark in its proper position, using a perforated pattern. Then we "dust" through this pattern with whiting or talcum powder on the red surface; and with charcoal powder on the white trade-mark. The outlines of this lettering are then covered very carefully with a masking-paste.

From our experience we have found that this "mask-



The finished job, ready for the road. . . . Total time in paint shop, including cleaning, welding, etc., averages 3½ days. . . . Total cost for this paint job (refinishing over the old paint) was $37.80. . . . Labor amounted to $30.10; material, $7.70.

While the roof is drying, the chassis and running gear are being painted with a good grade of "chassis black", sprayed on in one heavy coat. Wheels are then painted with two coats of red synthetic enamel, using a type of paint which permits the spraying of the second coat within about ten minutes after the application of the first. We use a pressure (at the gun) of between 60 and 70 pounds for all spraying work.

Now we are ready for the very important operation of preparing our body panels for the lettering of our trade-marks. These trade-marks are displayed in three places, viz: one on the tail-gate, and one on each of the cab doors. We use the trade-mark shown in the illlustration; it's simple and quite effective, reading *"Drink Coca-Cola in Sterilized Bottles"*, the name *"Coca-Cola"* appearing in our regular well-known script trade-mark.

On the tail-gate (which is finished in red) we use

ing" process of lettering gives us a better-looking trade-mark; that it is quite durable; and that it is almost impervious to washing off. Incidentally, it costs us about 30 per cent *more* than it would cost us to put our trade-mark on with decalcomania transfers, but we believe that the results obtained justify the difference in cost.

We are now ready for the application of the main color coats—yellow to the truck, cab and body; and red for the tail-gate. Before doing any of this painting, all windows, lights, ornaments, and even the top, are masked out with masking-tape and paper, to protect against being dirtied by the spray.

Now we are ready for the spraying of the main coats, and we check the air-pressure to see that it is set at between 60 and 70 pounds. Thinner is added to our material as needed. Body, cab, doors, hood, fenders, etc., are sprayed with two coats of yellow

(*Please turn to page* 70)

LUBRICATING INTERNATIONAL, FORD, MACK AND WHITE TRUCKS

ALL CAROLINA POINTS

A. A. A. Highway Express, Inc.

632 14TH STREET, N. W. PHONE HE. 3166-7

Atlanta, Ga.

June 8, 1937

David T. Bussey, Distributor
Macmillan Petroleum Corporation
Atlanta, Georgia

Attention: Mr. C. R. White

Dear Sir:

Sometime ago your Mr. White called on us in regard to using Macmillan Ring-Free oils. We operate a fleet of thirty-five trucks including International, Ford, Macks and White. After investigating and trying Ring-Free oil in our equipment we have found that it lives up to every recommendation made for it.

We have had repeated comments from our drivers as to the smoother running and better performance these trucks are giving us. Also, a noticeable increase in gasoline mileage. The motors seem to be free of sludge and carbon which in the past has been the source of most of our troubles. We are running this oil at least double the length of time in our motors thereby reducing actual oil consumption to a great extent.

Therefore, it is indeed a pleasure for me to recommend to any fleet operator the use of Macmillan Ring-Free Oil.

Very truly yours,

A. A. A. HIGHWAY EXPRESS, Inc.

Walter B. Barnes

In charge of Maintenance

MACMILLAN RING-FREE MOTOR OIL

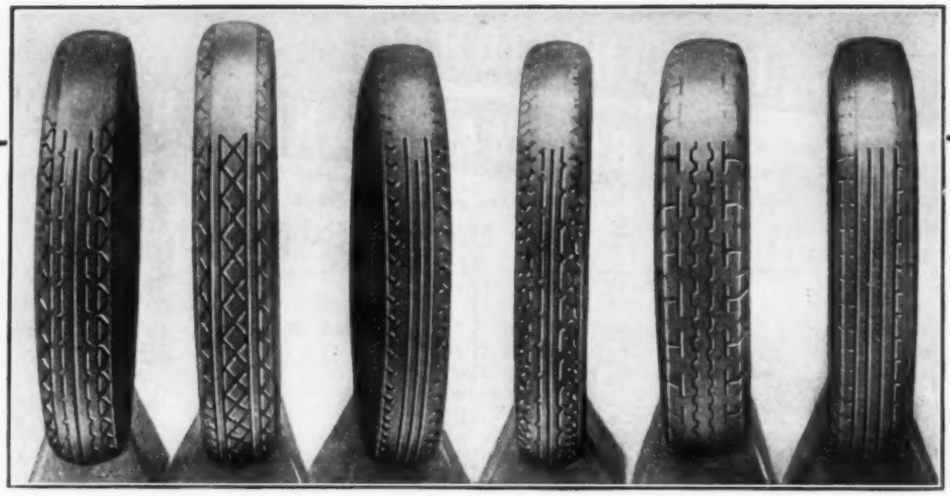
1. GREATER FILM STRENGTH
2. HIGHER HEAT RESISTANCE
3. LONGER CLING TO METAL
4. FASTER PENETRATION
5. REMOVES HARD CARBON
6. IS NOT CORROSIVE

Sold only in refinery-sealed containers • Never in bulk

• Smoother and better performance from any motor is the reward of using RING-FREE. Because this triple-distilled motor oil does a better job of lubricating (which means reducing fricton) any make of truck will deliver greater mileage per gallon of gasoline and more miles per quart of oil when RING-FREE is in the crankcase. The Macmillan Man in your area can quickly show with the seven Macmillan tests why RING-FREE reduces friction more than any other motor oil. Cut your costs by investigating this unusual oil.

MACMILLAN PETROLEUM CORPORATION

530 West 6th Street, Los Angeles; 50 West 50th Street, New York and El Dorado, Arkansas



Tire Regrooving Experiences *in* 194 Fleets

"TO REGROOVE or not to Regroove?" That was the question which we asked a few months back through the means of our Question-of-the-Month Club. . . . The questionnaire (Number 80) appeared in our September issue and 194 fleet operators found the time (or took the trouble) to fill it out and mail it back to us.

We drew the following conclusions, after thoroughly digesting the replies:

(1) That a well-defined tread, either on a new tire or one produced by regrooving, helps to improve stopping-ability and thus contributes to safe operation.

(2) That about as many fleet operators are in favor of tire regrooving as are opposed to it.

(3) That fleet opinion differs quite considerably on the value or lack of value of a regrooved tire.

(4) That (among those who regroove) regrooving is considered more as a safety measure, rather than as an economy service.

(5) That the X-type, or diamond tread pattern seems to be preferred by those fleet men who practice regrooving.

(6) That regrooving shortens the overall life of the tire, but lengthens the amount of safe mileage left in the tire.

(7) That tire regrooving, in some fleets is being dispensed with, due to the fact that these fleets are now retreading or recapping tires, when they become smooth.

As to how "representative" our survey is, it might be pointed out that the 194 fleets who participated are located in 34 states, Hawaii, Puerto Rico and Canada, and are operating in 27 or more different industries, with trucking, petroleum, public utilities and dairies leading the list. They have an "average" of 158 vehicles per fleet, so you see that our survey can be considered *quite* representative.

Before continuing with a sketchy review of our findings in this survey, may we repeat that, as is our usual custom, these 194 fleet men (God bless 'Em) have by this writing received their type-written tabulations of all the replies, including all of the confidential and "meaty" information. You fellows who did not participate in it will have to be satisfied with the brief summary which follows—trade-names and other important data omitted. Here's what we found out about tire regrooving in 194 fleets:

In answer to the first question, which asked, *"What is your practice with regard to tire regrooving?"* 38 fleets reported that they do it in their own shops, 28 fleet men have their tires regrooved by outside shops, and 6 operators do some and have some of it done outside. . . . Five of the fleets who answered have "mileage contracts"; therefore they do not do any regrooving themselves. . . . Another 23 fleet operators reported having no experience but returned the blank simply because they were interested in seeing the returns. . . . Twenty-one fleets re-cap or re-tread tires, instead of regrooving them. . . . Sixty-seven more fleets reported that they do *not* regroove tires.

In this connection it is only fair to tell you that some of these last-mentioned fleets have never tried regrooving; others have never been "sold" on it; and some of them are definitely against regrooving. . . . There were only 6 operators who reported that they previously used to regroove tires and have discontinued the practice.

The breakdown of answers to the first question which we have just given you probably leaves you

(*Please turn to page* 42)

A "FLEET OWNER" SURVEY ON TIRE REGROOVING

COULD YOU WRITE A LETTER LIKE THIS

—about the service of the generators you're using?

WHEN you equip your buses or trucks with Volt-O-Matic Generators, you not only get all the advantages of full automatic voltage regulation listed below. You get more—plenty more. You get time-tested design—perfected over quarter of a century... time-tested precision, acquired through years of know-how... time-tested materials, many especially developed for the special requirements of fleet service. Write today for booklet! United American Bosch Corporation Springfield, Mass.

Below: *One of the 35 buses of the Green Bus Lines, equipped with Volt-O-Matic Generators.*

Green Bus Lines, INC.

PHONES STILLWELL 4-3800 3801 3802 3803 3804

3702 QUEENS BOULEVARD
LONG ISLAND CITY, N. Y.

December 15, 1937

United American Bosch Corporation
Springfield, Massachusetts

Gentlemen:

We operate a fleet of 35 buses which have been driven a total of 4,550,000 miles since June 1935. Each bus is equipped with a Volt-O-Matic Generator; and the maintenance record of these generators is so gratifying that we thought you would like to know the following facts:

1. No repair expenses incurred whatever, except a new set of brushes after 100,000 miles average per bus.
2. No bearings replaced to date.
3. No armatures replaced.
4. No commutators turned down or under-cut.

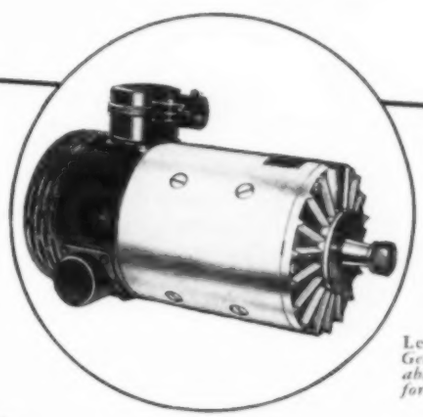
This record is, in part, a tribute to our very rigid preventive maintenance system which involves periodic inspection, and cleaning. Nevertheless, it is largely to the Volt-O-Matic Generators themselves that the credit belongs. In fact such maintenance-free generator service is so unusual that we feel it would be taking a chance to use any other generator.

Very truly yours,

GREEN BUS LINES
Peter Brasser
Peter Brasser
Superintendent of Maintenance

YOURS... with VOLT-O-MATIC GENERATORS

1. **Full automatic voltage regulation.**
2. **All electric current—for lamps, horns, wipers, etc., is supplied by generator (instead of battery) whenever the engine is running.**
3. **Protection against over-charged or insufficiently charged batteries.**
4. **Prolonged battery life.**
5. **Steady lights, safer horns, easier starting, improved ignition—hence better performance.**
6. **Freedom from road breakdowns due to battery and generator trouble.**
7. **Minimized maintenance costs . . . savings often amount to hundreds of dollars a year.**

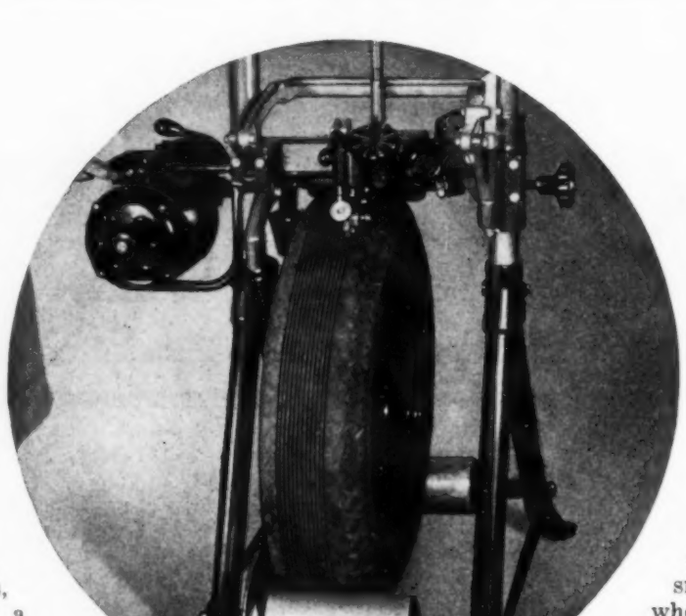


Left: Volt-O-Matic Generators are available in various sizes, for every type of service.

VOLT-O-MATIC TIME-TESTED GENERATOR

UNITED AMERICAN BOSCH CORPORATION

SPRINGFIELD, MASS. NEW YORK CHICAGO DETROIT



somewhat "at sea". In attempting to analyze it, we feel that there is a very definite market for regrooving tools in those fleets which are in favor of it, but have the work done outside. . . . We also are inclined to suggest that those who have not tried it should do so, and learn for themselves, whether it is desirable or not. . . . At any rate, if *we* manufactured regrooving tools, we would certainly make a strong effort to put a tool into the hands of *every* fleet operator, in order that he could find out for himself. The cost is not great and if any advantages are forthcoming, intelligent fleet operators will find it out pretty quickly. So on to the next question, which is confidential.

We asked, *"What make of regrooving tool is used?"* Ten different makes were mentioned, and although one or two makes were somewhat in the lead, we would not say that the lead was particularly great. Therefore, it seems as though *anyone* with a good tool, efficient distribution facilities and a reasonable price, still has a chance in the fleet market. We won't mention any of the makes here, but those who have the tabulation to our survey already know the names. If you're interested, we'll send you one of these summaries in exchange for the questionnaire which is printed in this issue, properly filled out. It's on page 57, and if you fill this one out you'll also get the summary to it, when ready.

Next we asked, *"What type of regrooving tool is used?"* . . . The answers here were Electric Hot-Knife —45; Cold-Type Regroover—14; Both—5; No Answer —8. . . . You will note that these figures total 72. If you go back and read the answers to the first question you will find that a total of 72 fleet operators are either doing regrooving in their own shops or are having it done outside. Therefore, all future answers relative to various stages of the regrooving process will total 72. . . . All answers to "general" questions, will total 194. So much for that, except we ought to remark that the hot type of regroover seems to have the preference, which is quite obvious in the foregoing figures.

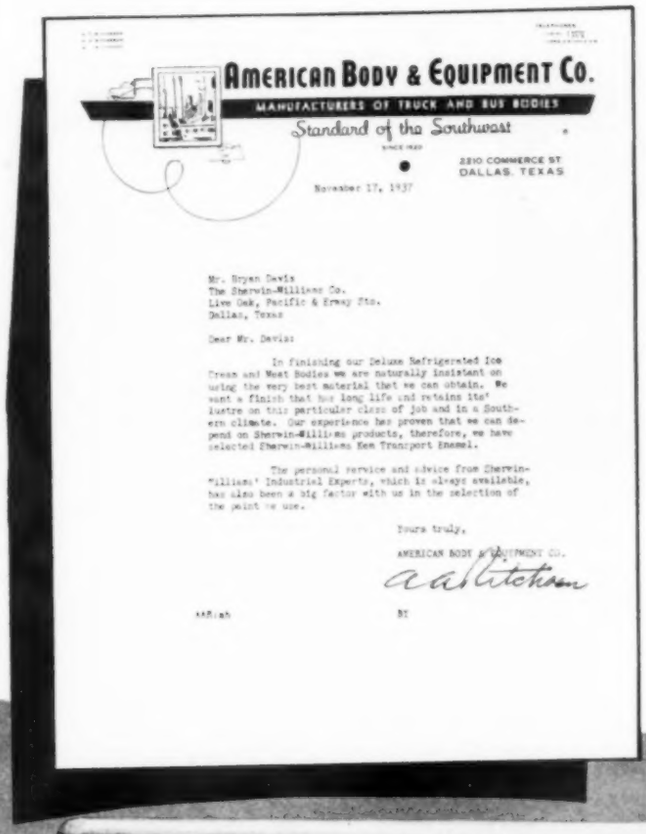
And here is an interesting question. We asked *"At what stage of tire wear do you begin to regroove tires?"* . . . 47 fleets reported that they begin to regroove *before* the tire wears completely smooth; 22 reported that they wait for their tires to become smooth and then do the regrooving. . . . We are inclined to agree with those who regroove *early* in the tread-wear of the tire. This enables those operators to enjoy maximum tread-depth over a *longer* life of the tire, and also *some* sort of increased safety in operation, if we can accept as a fact the statement that a tire-tread gives safer operation than a smooth tire. . . . To those who don't regroove until a tire becomes smooth, might we offer the suggestion to try it some time?

The next question is equally interesting. We asked, *"What type of grooves do you cut, or have cut?"* . . . Twenty-four operators follow the original tread design, which sounds sensible enough. . . . Fifteen fleet men cut X-type or "diamond" type patterns. Since this is the tread design used by a prominent tire manufacturer, we're not going to stick *our* necks out by commenting on this one, but there are the figures. . . . Another 13 operators cut straight, annular grooves; perhaps because they have a tool which limits their activities in that direction. . . . And 20 more fleet men report that they cut "various" types of grooves; which might include all of the above and also others.

Next we asked, *"Which tread design is best, in your opinion?"* . . . The X-type or "diamond" tread pattern seems to be the preferred one, for 29 operators chose it. . . . Nine more operators specified "original" tread design, and the Lord only knows what design that is, for we don't know what makes of tires they are using; and those answers are of little help. . . . Eight more operators report that they prefer straight grooves; 1 reported "block-type" grooves; and 11 more operators reported a variation of tread designs, all boiling down to the fact that they prefer straight grooves for wheels that do not drive (such as front and trailer wheels) and some sort of a more complicated tread design for driving wheels. . . . The balance did not answer this question.

And here is the question that upset the apple-cart of at least one man's thoughts. Last summer we had a controversy with a prominent fleet operator who stated that no tread design, either on a new tire or on one produced by regrooving, was worth a darn, when it came to *stopping* a vehicle. In other words, treads on tires did not, in his mind, constitute

(*Please turn to page* 44)



AMERICAN BODY & EQUIPMENT CO.
MANUFACTURERS OF TRUCK AND BUS BODIES
Standard of the Southwest
2310 COMMERCE ST
DALLAS, TEXAS

November 17, 1937

Mr. Bryan Davis
The Sherwin-Williams Co.
Live Oak, Pacific & Ervay Sts.
Dallas, Texas

Dear Mr. Davis:

In finishing our Deluxe Refrigerated Ice Cream and Meat Bodies we are naturally insistant on using the very best material that we can obtain. We want a finish that has long life and retains its' lustre on this particular class of job and in a Southern climate. Our experience has proven that we can depend on Sherwin-Williams products, therefore, we have selected Sherwin-Williams Ken Transport Enamel.

The personal service and advice from Sherwin-Williams' Industrial Experts, which is always available, has also been a big factor with us in the selection of the paint we use.

Yours truly,

AMERICAN BODY & EQUIPMENT CO.

a a Hitchcock

AAHiah BY

SWP
COVER THE EARTH

Beauty

THAT HAS REAL ADVERTISING VALUE!

Steffens Refrigerated Ice Cream Unit built for Central Dairy Products Co., by American Body & Equipment Co., Dallas, Texas.

What kind of impressions does your fleet make as it travels Main Street or Metropolis? Your trucks should do more than deliver goods. They should be effective traveling billboards that help sell goods. Fleet operators the nation over are capitalizing on the exceptional beauty of Sherwin-Williams KEM TRANSPORT ENAMEL to promote sales. This remarkable finish is practical in application, extremely durable, and easily maintained lustrous and brilliant in appearance. Why not let the Sherwin-Williams "OK" Automotive Representative show you how KEM TRANSPORT ENAMELS combine economical maintenance with increased advertising value? Write The Sherwin-Williams Co., Cleveland, Ohio, and all principal cities.

SHERWIN-WILLIAMS
"OK" AUTOMOTIVE FINISHES

a safety factor worth considering.

Therefore we were very careful to word our question in such a manner that it would be quite clear, and we hoped it would prove us right, and our friend wrong. So we asked, *"Do you find that a well-defined tread (either on a new tire or on one produced by regrooving) helps to improve stopping-ability and thus contributes to safer operation?"* . . . Now, we are not the type of person who likes to say, "I told you so" or anything like that, but we will let the answers speak for themselves. They were: "Yes"—124; "No Answer"—70. . . . You will note that there were no definite "Nos" in answer to this question, so we can safely state that most everyone (except perhaps our friend) seems to agree that a well-defined tire tread *does* help to improve stopping-ability and thus contributes to safer operation.

The question as to whether tire regrooving actually shortens or lengthens the life of a tire, being a much-mooted one, it was only natural that we included something on that subject. So we asked *two* questions. First we asked, *"What is the direct result of proper regrooving, WITHOUT regard to safety; does it shorten or lengthen the life of the tire?"* . . . In this respect, 49 operators reported that it shortens the life of the tire; 37 stated that it lengthened the life of the tire; 2 said that it made no difference; and 106 did not answer.

Next we asked *"What is the direct result of proper regrooving, WITH regard to safety; does it increase or decrease the safe mileage of the tire?"* . . . To this question the answers were: "Increases safe mileage"—83; "Decreases safe mileage"—15; "No Answer"—96. . . . So there you are; you have the music; now write your own words and you will have the answer to the controversy; that is, if you believe in surveys and figures.

We next asked, *"All things being equal, how would you classify tire regrooving—as a safety measure, or as an economy service?"* . . . The bulk of the answers ran along the lines of safety, being as follows: "Safety Measure"—71; "Economy Service"—7; "Both"—19; "No Answer"—97. So now we have the answers to *that* question, and that's all the questions asked.

We have a very excellent reputation for conducting these surveys in a fair manner, and in order to keep it, we tried very hard to present you with the results of this one on regrooving in the completest and fairest possible manner. We found it quite difficult to draw any rash conclusions and let it go at that, as the remarks which were penned in at the bottom of many questionnaires were so numerous, that we could not, in one mere stroke of the pen, draw any one, single conclusion and say "Here it is!"

The only possible way out of this particular situation seemed to us to be to dig through the questionnaires, pick out all of the pertinent remarks in favor of regrooving, and also those against regrooving, and dish them out to you. There were quite a number, and we hope you will take the time to wade through them. Here are many of the important remarks made IN FAVOR of tire regrooving:

"It has been our experience that insurance companies favor regrooving for safety and therefore reduce premium rates."

"Regrooving increases safe mileage from tires and improves appearance."

"Regrooving gives added mileage after tires are worn smooth."

"From a safety standpoint, especially on large units, it pays to regroove and keep good treads on tires."

"Regrooving lengthens the life of the tire; makes tire safe; gives driver more confidence; gives better traction on wet streets."

"Regrooving, before a tire has worn entirely smooth, will increase traction and decrease spinning of wheels, adding to tire mileage on slick roads. Also adds traction in deceleration, making it possible to stop vehicle safely without skidding. Think regrooving of truck tires well worth while, but consider it more for safety than economy."

"Regrooving lengthens the life of the tire by taking the shock off the side walls; safer because sliding is reduced to a minimum."

"Regrooving reduces heat and therefore increases mileage. Reckless drivers complain about worn tires. Increases stopping ability."

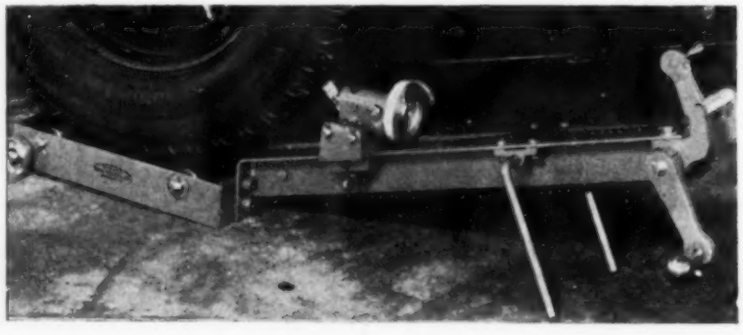
"Regrooving keeps tires cool; gives better traction; tread is more pliable, which means more tread life."

"Regrooving increases safety and economy of tires; has safety effect on driver; builds-confidence in ability to stop vehicle."

"We regroove when a driver complains of smooth tires or if he complains of skidding on some particular kind or stretch of road or street. We preach safety constantly and install any equipment that will help make a safer truck."

"No one should be allowed to run tires with no tread on them, any more than they should be al-

(Please turn to p. 66)



Divco Offers *New* Door-to-Door Unit

•

STREAMLINED styling is offered in this new house-to-house, 4-cylinder one-tonner. . . . Many refinements in engine and chassis are announced by the maker.

A NEW model house-to-house delivery vehicle is offered by the Divco-Twin Truck Company, Detroit, Mich., designated as Model U and especially designed for use by such firms as dairies, bakeries, dry cleaners, laundries, department stores and parcel-delivery companies.

Streamlined styling is featured in the new model, and the distinctive appearance is pointed out as a factor adding definitely to the value of this vehicle as a moving advertisement for the business it serves.

Flowing, unbroken lines are presented in radiator grille, hood and fenders. Two curved moulding lines follow the contour of the front-end and extend the full length of the body, emphasizing the streamlined effect. Built-in chrome head-lamps, chrome radiator ornament and chrome-rimmed name-plate complete an attractive front-end design. Windshield is sloped at an angle, and roof corners are rounded to conform to the general streamlined design.

The new body provides for the utilization of all possible loading space, with materially increased loading space in front. Due to the closeness of the driver to the windshield, his vision is materially improved. Side windows are of the rotating type, permitting good ventilation. Book-pocket is conveniently located in the front end of the roof, in the windshield header. Instrument panel is widened to provide room for an open route-book.

Added comfort is afforded by a driver's seat with a back. Seat is adjustable to two positions and can be folded up and placed in a socket on rear cross-panel when not in use. A large space under the front floor can be used for storage of driver's rubber overcoat, boots and similar items.

A lower through-aisle is a feature of the new Divco-Twin. Operating pedal is located far enough forward to be clear of the through-aisle, and steering gear does not project into the aisle.

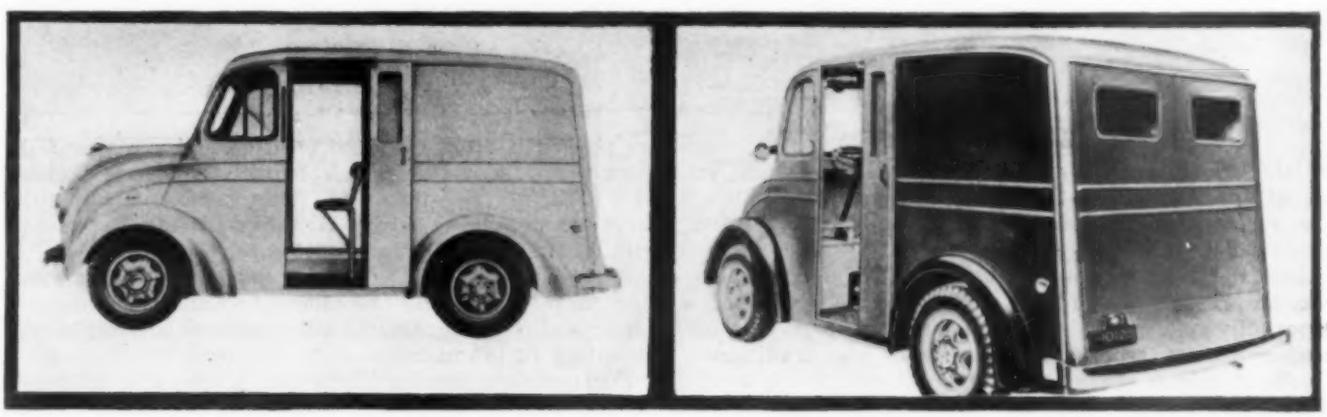
Chassis improvements and refinements claimed by the manufacturer include the following: Increase in compression ratio of from 5.6 to 6.07 to 1. Crankshaft diameter increased from 2″ to 2¼″. Water-pump has new type composition carbon water-seal, and is mounted on front of cylinder block. A two-piece manifold replaces the single cast part, and has automatic heat control.

Rear engine mounting is a new restriction-sleeve type, consisting of an outer and inner sleeve of steel with rubber bonded to both steel sleeves. Valve lifters are mushroom type, pressure-lubricated. An electric oil gauge is provided. Radiator has increased capacity, with provision for preventing water syphoning out, under high-speed running.

The master-cylinder of the hydraulic braking system is moved to the left-hand rear motor support bracket, to provide easier filling and to safeguard against dirt in the fluid. Wheels have the new type semi-drop-center rim. Tires are the new air-wheel type.

The battery is now carried on the front side of the dash, where it is more accessible for putting in water;

(*Please turn to page* 64)

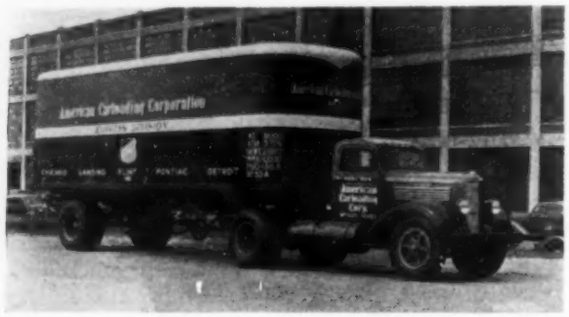


Two more views of the Divco-Twin house-to-house unit, especially designed for this service.

Highway Offers Two New Standard Trailers

TWO new standard trailer models are announced by Highway Trailer Company, Edgerton, Wis. Each is radically different from the other.

For handling cargoes which require protection against rough handling, heat, cold, dust and theft, Highway has developed the *Roadmaster*. And for the transportation of dry freight of every kind, they have developed the *Freightmaster*, which is illustrated here.



The *Roadmaster* is streamlined and is built with standard foundation-type skirting, with medium depth skirting or without skirting and fenders; with drop frame or straight frame, with conventional or streamlined top, with or without windsplitter—in many variations from standard production-line jobs. The body can be fully insulated, if desired. The metal-faced rubrail is built integral with the extended body stakes. There is a full-length all-steel bumper at the rear. The interior is lined with Douglas fir veneer. The top is a one-piece metal crown with insulated center section.

The *Freightmaster* body is composed of a sheet metal enclosure and pressed metal framework riveted into a single unit. Everything except the floor-boards is of formed metal. The top is self-supporting, built up independently of the body, on new type fixtures. Three styles of tops are optional: An all-steel flat top, a steel streamlined top, and an open top with removable bows and a new type knee-brace. All open-top models have a tarpaulin as standard equipment. The tailgate hinge is a continuous tubular arrangement which allows no open spaces or obstructions. The entire rear end is simple and weatherproof. The *Freightmaster* is available in three standard lengths and two standard heights.

These two new standardized bodies are in full production and are available for immediate delivery. . . . For literature and complete details address Highway Trailer Company, Edgerton, Wis. . . . Mention of FLEET OWNER is always appreciated.

●

Red and Orange Popular Truck Colors

COLORS designed for safety featured the exhibition of trucks making their first showing for 1938 at the recent Automobile Show at New York's Grand Central Palace.

Red and orange led all other colors among the exhibitors. Tan, buff and light gray were also in evidence, especially among the smaller models, with a marked tendency away from the darker tones and traditional blacks of several years ago.

Tests recently conducted have demonstrated that orange can be seen further and more clearly on the road than any other color, with red a close second.

Trucks shown this year also stressed interior cab appointments making for driver comfort, another important safety consideration. Seats and cab linings displayed an increased use of pyroxylin-coated fabrics and rubber-coated waterproof fabrics.

●

Goodrich Test Fleet Again in Florida

THE famous Silver Fleet of The B. F. Goodrich Company, engaged throughout the year in testing tires, has arrived in Florida, and will carry out its testing operations there during the winter months. The fleet will have its headquarters in Orlando, Fla.

In charge of Supervisor H. B. Viers, drivers of the Silver Fleet pilot their cars and trucks over 2,000,000 miles of highway each year.

●

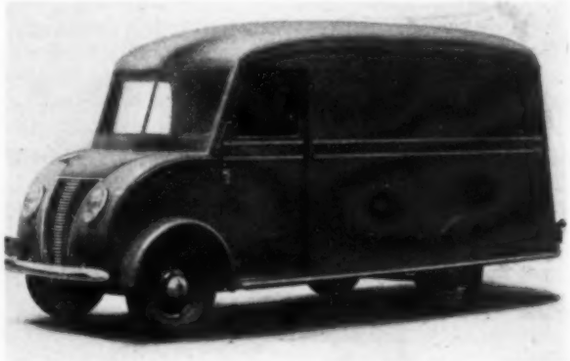
Parcel Delivery Body for Ford Chasses

TRANSPORTATION Engineers, Inc., Detroit, Mich., have announced a new Parcel Delivery Unit, available on the Ford V-8, 60 h.p. and 85 h.p., 112″ commercial-car chassis, and also on the new 122″ wheelbase one-ton chassis, which is new with Ford this year.

Side panels and roof are metal-faced plywood panels, and the one-piece plywood floor is supported by pressed steel under-framing, all welded into one piece. Loading space, 120″ long back of the driver's seat, is 68½″ wide; the clear head room is 66″, with a total of 334 cu. ft. available load space back of the driver's seat.

The pressed steel construction makes practical a weight of 3,390 lbs. on the 85 H.P., 112″ commercial car chassis, and 3,190 lbs. on the 60 H.P. unit, company engineers stated.

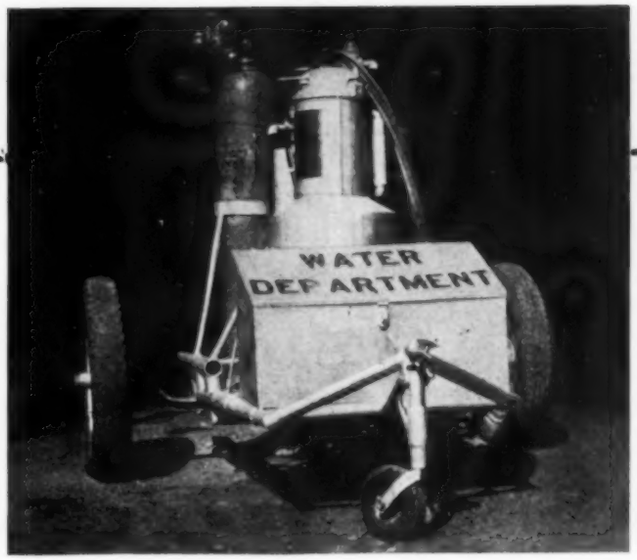
Particularly accessible from either side, through wide, inside-sliding, self-locking doors, the floor of the cab and body is 24″ from the ground. Driving controls



are all in the usual standard position and are operated from a low swivel seat that brings the driver's eyes within 18″ of the windshield. This, combined with the short outside hood, gives visibility of the pavement within three feet of the front wheel.

With inside, as well as outside hood instantly removable, there is adequate accessibility to all of the engine parts; and engines can be easily removed and replaced, according to the makers.

For complete details, literature, prices, etc., address Transportation Engineers, Inc., Detroit, Mich. . . . Mention of FLEET OWNER always helps.



A Portable Generator-Trailer for Welding

•

MUNICIPAL engineer fabricates, by welding, a trailer designed for the transportation of oxygen and acetylene welding equipment, thus facilitating maintenance work at various points in a widespread area.

BECAUSE of the fact that his work required oxy-acetylene apparatus at various points in a large area, the city engineer of a Western community designed a trailer for the transportation of oxygen and acetylene.

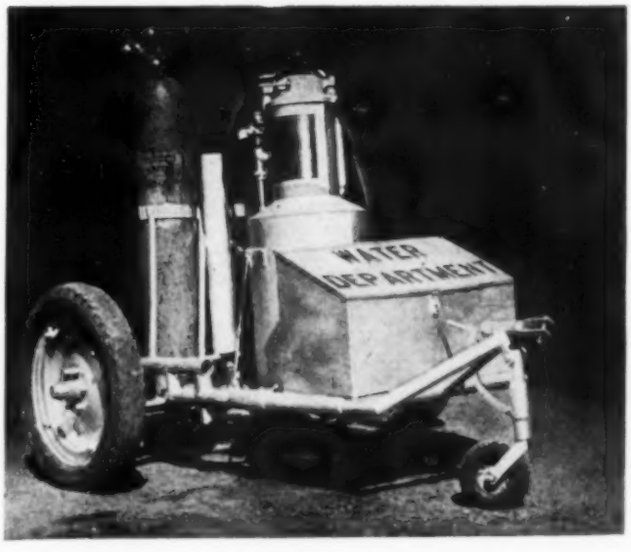
The trailer accommodates one oxygen cylinder and one portable medium-pressure type acetylene generator. A metal box is included to house the regulators, blowpipes and hose when not in use. This box is provided with a hinged clasp so that it can be locked. An assortment of welding-rods is also carried, in a steel cylindrical container.

The trailer is light, compact, portable and inexpensive. All parts going into its construction, except one wheel, were salvaged material, welded and cut to the proper shape and assembly to form the chassis.

The axle and rear wheels were taken from an old automobile. The small third wheel, at the front end of the chassis, was purchased to place in the assembly.

The coupling unit, on the front end, is of the swivel type. When this is raised into position on the rear end of a passenger car or truck, it lifts the third wheel off the ground.

The chassis is slightly underslung and is provided with small springs of the cantilever type that join on both sides of the axle. This feature, combined with the pneumatic tires on the wheels, overcomes practically all objectionable vibration and contributes to the ease of handling, we are informed.



A close-up of this ingenious piece of equipment which rides at 50 miles per hour on a chassis of welded steel tubing. When attached to a car or truck the small front wheel is raised from the ground.

The third wheel on the front end acts as a support when the trailer is not attached to a car. This gives the trailer perfect balance and portability for position changes when the work at hand requires it.

The weight of the oxygen cylinder and of the generator is supported mainly by the rear axle of the trailer. This enables one operator to lift the front of the trailer and easily push it or pull it wherever he desires.

The trailer when ready for transportation is shown in the accompanying illustrations. It is no uncommon sight to see it being towed down the road at 50 miles per hour.

We regret very much that we do not have more detailed constructional data to offer at this time. It is quite likely that small, inexpensive trailers of this type can be similarly fabricated and put to other uses than the one outlined in this article.

Speaking of details, the wheels and tires look very much like the ones used on a 1927 Chevrolet passenger-car. And so does the rear axle of this trailer, which would naturally be the front axle of the car in question. The small wheel and tire should be easily obtainable from some of the major tire manufacturers. Perhaps a firm specializing in industrial trucks and casters can also supply such a wheel.

The balance of this job, as before stated, was fabricated from scrap tubing, flat strips and (*Please turn to page* 72)

LETTERS TO THE EDITOR

UTILITY MAN SPEAKS

● *Dear Mr. Fischer:* Your Questionnaire on passenger-cars, published recently, seems to be (to me) one of the most important subjects in fleet operation.

We operate 210 vehicles over an area of 10,000 square miles, which includes all kinds of roads, grades, etc. The loads carried in our small cars vary, from one passenger only, up to several tons.

The average standard-built passenger-car is, in my estimation, over powered and built to give much better performance than is necessary for more than 50 per cent of fleet operation.

I realize that fleet owner business is only a small percentage of the total output of automobiles, and have hoped that, because of increasing taxes, etc., there might be a demand from the general public for a four-cylinder automobile that would perform up to a certain point with a certain load, and that would be built with a minimum of "gadgets" and trimmings, to keep the price down.

A car of this kind could, of course, incorporate every known device for safety, and I hope that in time, we as fleet users, may be able to purchase such cars that will combine economy and safety.—*E. L. Rodman, Supt. Transportation, New York State Electric & Gas Corporation, Binghamton, N. Y.*

●

A COMPLIMENT, INDEED

● *Dear Mr. Fischer:* Regarding the publication of my article on Motor Oil Analysis in your November issue, I am very much pleased with your presentation of it.

I believe that a periodical which goes to the pains and care which yours does, on articles of this type, certainly deserves a lot of credit.

I have had several direct inquiries on this article, and have taken care to answer them as promptly as possible. So, taking all in all, everyone should be pleased.—*Verne F. Curtis, Marshall Field & Company, Chicago, Ill.*

●

"HATE TO BE WITHOUT IT"

● *To the Editor:* We are attaching the information you requested regarding the size of our fleet and you can rest assured that we will be pleased to furnish as soon as possible, any information you may desire.

We wish at this time to tell you of the benefits that we receive from your magazine, FLEET OWNER, each month, and that we would hate to be without it.—*R. O. ("Doc") Snowdon, General Supt., American Transfer & Storage Company, Dallas, Tex.*

●

DEFROSTER SUGGESTIONS:

● *Dear Mr. Fischer:* Recently you conducted a questionnaire on Salesmen's Cars, to which I would like to add the following remarks:

A salesman's car should be safe and comfortable, due to the fact that he must be out in all kinds of weather. It should have *good* "regular" equipment, such as tires, windshield-wipers, rear-view mirrors, skid-chains and lights.

We think there is lots of room for improvement in the defroster situation. How about a three-way cowl ventilator connected to a duct leading from under the hood and built-in as part of the body?

This would give fresh air from the outside, as the present ventilator does; it would also give hot air from the motor compartment into the cab or body; and would direct hot air from under the hood across the entire windshield, thus serving as a defroster as well.—*W. T. Bowers, Foreman, The Schluderberg-Kurdle Co., Baltimore, Md.*

RIGHT OR WRONG?

● *To the Editor:* We regret that we could not answer your recent Questionnaire on Trailers, as we do not operate *any* kind of trailers. Our fleet, as you probably know, consists of all straight trucks, operated throughout the United States.

However, I would like very much to get a copy of the summary to the Trailer Questionnaire, as we have always been interested in this subject, and feel this would be of direct value to us for our future operations. Sometimes we have wondered whether we were right or wrong in not using equipment of this kind?—*John S. Smith, Vice-Pres., Aero Mayflower Transit Company, Indianapolis, Ind.*

●

Q-O-M EXTREMELY INTERESTING

● *Dear Mr. Fischer:* Sorry that I could not fill out your Question-of-the-Month blank on Trailers; we do not operate any of these. . . . However, I want you to know that I certainly find the results from these surveys very interesting.

I will make an honest effort to participate in this worth-while department every month. . . . It's perhaps the best feature of your excellent magazine, FLEET OWNER, which is read from cover to cover.—*Frank N. Singer, Adolf Gobel, Inc., 24 Rock St., Brooklyn, N. Y.*

●

"O. K." TO REPRINT

● *To the Editor:* On reading your magazine, FLEET OWNER, I find some very fine articles which should be very helpful to our operators of the fleet of trucks operated by this Company.

In this connection, we would like to have you advise if we may have your permission to re-copy some of these articles, of course, giving your magazine credit, as well as the editors of such articles. This would be of benefit to the operators of our equipment.—*D. P. Murphy, Asst. District Mgr., Standard Oil Company of Kentucky, Atlanta, Ga.*

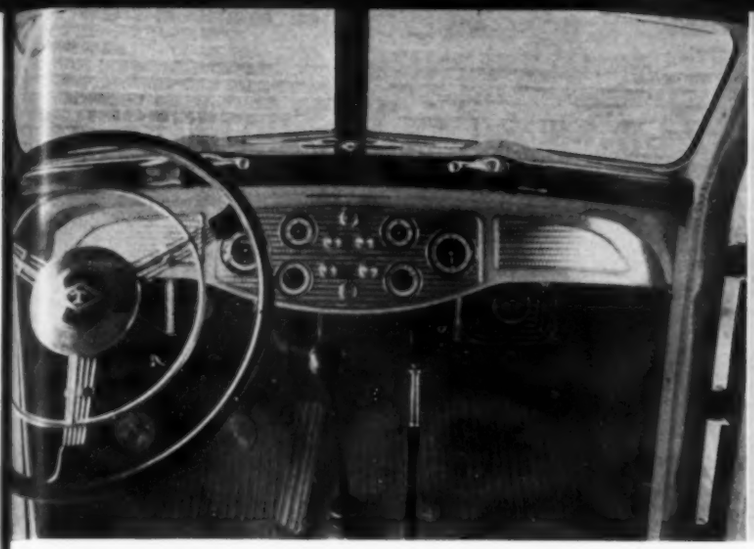
●

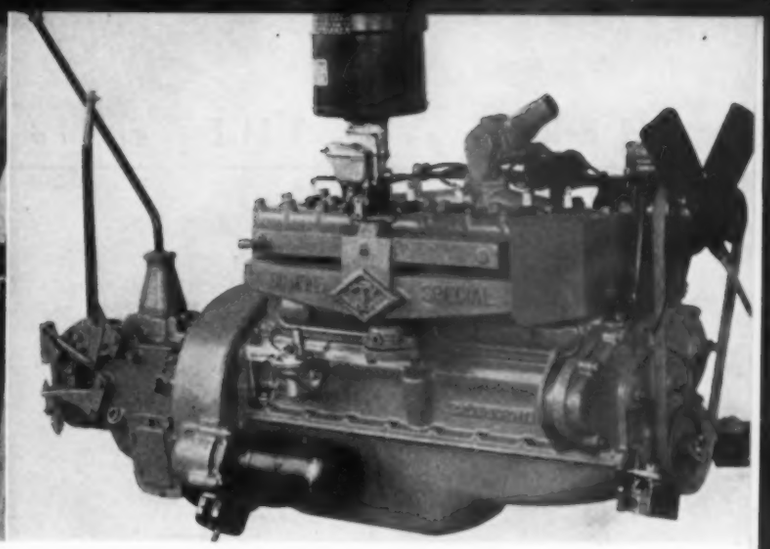
JUST A NOTE OF THANKS

● *Dear Mr. Fischer:* I regret that I have put off, from time to time, the opportunity of writing you and thanking you for my copy of your magazine, FLEET OWNER, each month.

I certainly think it is something that should be placed among the "best and most needed" equipment in any fleet owner's shop—large or small.

My fleet is rather small, but nevertheless, I find FLEET OWNER very welcome and helpful every month.—*C. Dillman, Mohawk Lumber Company, Ltd., New Westminster, B. C., Canada.*





Diamond-T Rounds-Out Its Line *with* "Super-DeLuxe" Models

FOR 1938 the Diamond-T Motor Car Company, Chicago, Ill., announces the most comprehensive program in the history of the company, together with a long list of advancements in design and construction.

In addition to the recently introduced Cab-Over-Engine line, which was illustrated and described in our November issue, and the one-ton models brought out during the summer, the standard line has been expanded by the introduction of the new "Super-DeLuxe" models, which present an entirely new concept for Diamond-T truck appearance, according to factory officials.

These models have attracted much attention at the recent truck shows and feature a new trend in hood, radiator, and fender design. Contours are smoothly streamlined, and are defined and highlighted by a novel treatment in stainless steel and polished chrome.

Chassis specifications of the "Super-DeLuxe" models are identical with the standard line, which also carries many new developments for increased power, durability, and ease of handling and servicing.

In accordance with the traditional Diamond-T policy, most of these new features have been incorporated into current production as rapidly as tests proved their advantage, and the 1938 line involves no radical changes and nothing which has not demonstrated its worth in many hundreds of thousands of miles of severe service.

In discussing the Diamond-T chassis, President C. A. Tilt stated: "During the past years truck engineering has made a great many very notable advancements. The 1938 Diamond-T, we believe, is the most thoroughly 'engineered' piece of work which our company has yet produced. It embodies many modern automotive advancements.

"The Diamond-T engine has been developed specifically for truck service. Full-depth cooling and valve-guide cooling are featured; also a seven-bearing crankshaft. Because of higher total bearing loads, higher under-hood temperatures and generally more severe demands of an engine in truck service, Diamond-T engines feature 'precision type' bearings, accurately fitted on both inside and outside surfaces. Thus automatic bearing alignment, longer life and easy field interchangeability are achieved. The adoption of cadmium-nickel alloy for the bearings, greatly widens the margin of bearing safety because of the greater strength and higher melting point of this material, it is claimed.

"These increases in strength and durability are accompanied by an increase in compression ratios and the adoption of the new 'high-lift' camshafts for better 'breathing'—providing a substantial increase in both torque and maximum power and furnishing improved economy at the same time, according to factory engineers.

"Another feature which enables us to practically eliminate crankshaft wear is the new process of electrical tempering which develops extreme surface hardness for crankshaft journals without distortion or loss of strength.

"Other features of the Diamond-T 'Super-Service' engine are: crankshaft counter-balances, special oil-filter and oil-bath air-cleaner. The 'Super-Service' engine is now standard equipment on all DeLuxe models,

(*Please turn to page* 64)

DIAMOND-T's Super-Deluxe Model 406 is shown here, with 14-foot drop-panel, streamlined stake body. . . . Above is shown the instrument panel with airplane-type dials and gauges; also the new Super-Service truck engine.

Fruehauf Offers New Trailer Body

A NEW improved trailer body, said to offer custom-built features at low price, is announced by the Fruehauf Trailer Company, Detroit, Michigan.

The new body, known as the "F" type, incorporates several features, such as all-metal, rust-resistant roof; die-formed front scroll and rear-header; and special high-grade steel panels. The roof actually reflects more of the sun's rays than a canvas type, protecting the load from excessive heat, it is claimed.

A special layer of plywood behind the panels not only helps eliminate waves in panels, and prevents rumbling, but the space between this interlining and the regular plywood lining of the body, affords a degree of insulation that means added protection for the merchandise.

Increased ease and economy of servicing is an important feature of this new "F" body. In case of accident only the affected parts need be replaced. "Snap-on" moldings are used throughout, so that any panel may be removed without disturbing another. Uprights can be taken out from inside of the body without interfering with the panels.

Fruehauf Trailer Company, Detroit, Mich., will be pleased to send you full details of this new body, without obligation. . . . When writing for same, we'd appreciate it if you mention this announcement in FLEET OWNER.

●

New York Buses Running on Leaded Fuel

THE 1,000 buses operated in New York City by the Fifth Avenue Coach Company and the New York City Omnibus Corporation are now powered by leaded gasoline. The two fleets have traveled approximately 26,000,000 miles during 1937. The number of passengers carried daily would constitute a city of nearly a million population.

Engineers of the Ethyl Gasoline Corporation and of the General Motors Corporation have cooperated on fuel problems, carburetor maintenance, and other factors which aid gasoline mileage and keep exhaust gas odors to a minimum.

Because of the unusual traffic conditions in New York, maintenance problems differ from those encountered in other cities, it is explained. Much of the new double-deck equipment employs an automatic transmission while all of the single-deck units use an air-shift arrangement so as to relieve the driver of the physical labor of shifting gears.

On many of the lines the gears are shifted from 400 to 600 times an hour, imposing abnormal wear on clutch and transmission parts. Increased gasoline mileage and improved overall performance has followed the adoption of regular grade, 70-octane leaded fuel.

●

Some Interesting Bakery Fleet Cost Figures

SAVINGS of 30 per cent on gasoline cost and of 20 per cent on total operating costs have been effected by the Midland Bakeries Company, of Terre Taute, Ind., through the purchase of a new fleet of 15 half-ton trucks with "door-to-door conversion" bodies, according to R. M. McKee, manager of the company's plant.

A compilation of figures recently released by Mr. McKee shows that gasoline cost for the new truck fleet is running approximately 1½ cents per mile. Total operating expenses, including repairs, insurance, taxes, depreciation, and other items, are running slightly more than four cents per mile. Depreciation allowance has been set up so as to amortize the entire cost of the trucks in four years.

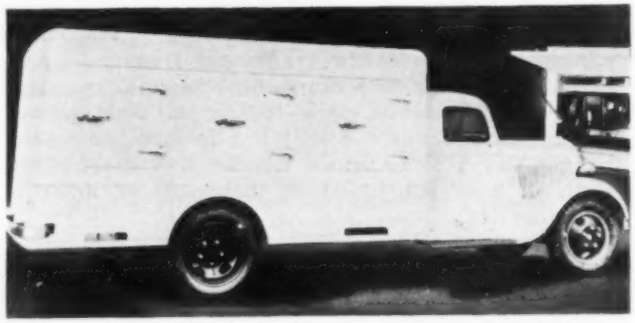
"On actual cost per mile," Mr. McKee declared "we have realized a saving of over 20 per cent, and with our new half-ton trucks we are averaging about 30 per cent savings on gasoline alone."

On the wholesale bakery routes covered by the new trucks, each driver makes an average of approximately 85 stops per day, Mr. McKee said. During the month of July, the trucks were operated a total of 25,313 miles for an average of 12.9 miles to the gallon.

●

G-E Exhibits Refrigerated Truck Body

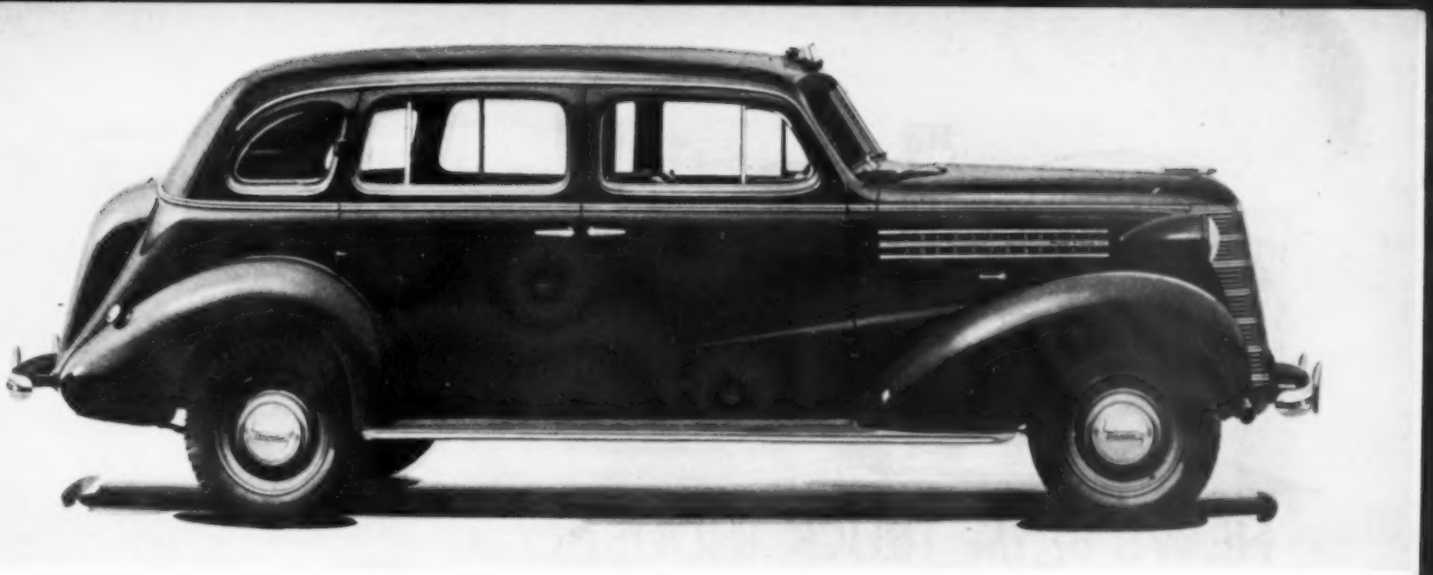
THROUGH the co-operation of the Seale-Lily Company, of Jackson, Miss., the feature of the General Electric exhibit at the Dairy Industries Exposition, held recently in New Orleans, was a refrigerated truck



body. The truck is owned and operated by the Seale-Lily Company and was removed from service long enough to be shown at the exposition where it aroused considerable interest.

In addition, General Electric had a cutaway compressor and a magnetic clutch on display. This apparatus forms an essential part of the electric equipment furnished with all G-E refrigerated truck bodies.

G-E representatives included H. M. Harrington and F. A. Kroner, transportation specialists. . . . Further details may be obtained from General Electric Company, Schenectady, N. Y. . . . Mention of FLEET OWNER always helps.



Chevrolet Offers 1938 Taxicab on 127-Inch Wheelbase

TO MEET a growing demand for a low-priced economical car with extra passenger-capacity for taxicab or livery use, Chevrolet last month announced its new 1938 taxicab model on a 127-inch wheelbase, with a special frame and body designed to meet the peculiar demands of livery service.

The new car incorporates a number of important changes, including improved front-end appearance, engine refinements, the new "Master" steering gear, and the new Chevrolet diaphragm-type clutch introduced on all Chevrolet car and truck models for this year.

The roominess and riding comfort of the passenger compartment has been materially increased through the addition of two inches to the width of the rear seat. Special front and rear spring mounting and the use of a ride-stabilizer, combined with the easier steering of the new model, make the car easier to handle both in traffic and on the open road, it is claimed.

The taxicab body is a Fleetwood product, featuring the Fisher "unisteel" construction. It is built to provide a maximum of safety and to withstand years of hard service, the makers state. Steel parts are ribbed and flanged to obtain the greatest strength, and the cowl, sides, back, floor, and roof have been fused into a solid steel unit by welding them together.

The exterior appearance parallels Chevrolet's 1938 passenger cars. The body is available in two sedan styles—plain back or with trunk. The trunk has the same large luggage space as the 1938 passenger cars. The four all-steel doors have been made very wide in order to permit easier access.

The driver's compartment has a comfortable driver's seat which is adjustable. Alongside the seat is a large space for parcels and luggage. The tool box under the seat is easily reached by tilting the seat.

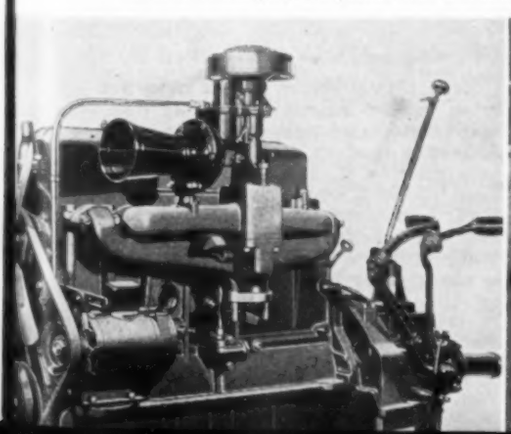
A full-length, full-height partition separates the front and rear compartments, designed so that various types of taxi-meters may be attached to it. Full width sliding windows in the upper part of the partition are glazed with safety glass.

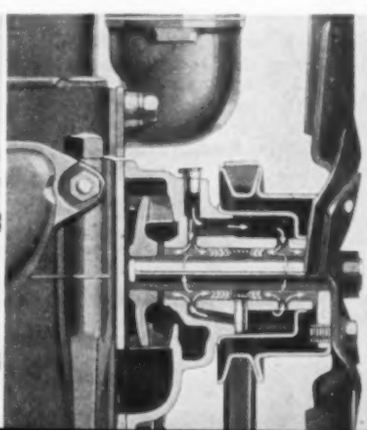
The rear compartment is trimmed throughout in gray mohair. Two forward-riding auxiliary seats are set at an angle designed to provide a maximum degree of comfort. The seat cushion and back are form-fitting, having been designed in the bolster-roll type.

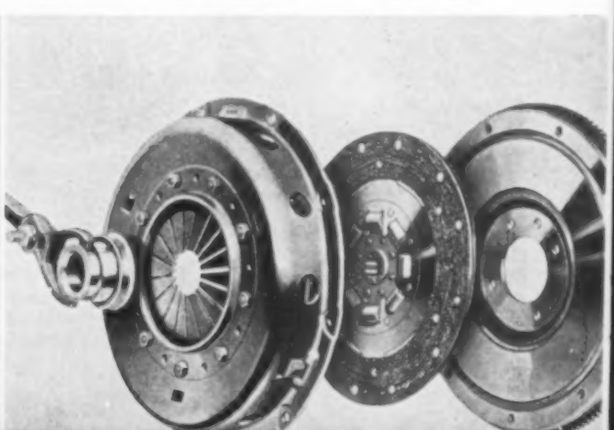
The chassis design combines both commercial car and passenger car features to provide durability and

(*Please turn to page* 72)

IMPORTANT MECHANICAL VIEWS: Left, the familiar valve-in-head engine. . . . Center, the improved water-pump seal and fan assembly. Right, the new clutch assembly. . . . Note that the new clutch uses a "diaphragm-type" spring, in place of the nine coil-springs formerly used on the clutch pressure-plate. . . . The throw-out bearing is a ball-thrust job, packed with lubricant and needing no further lubrication.







• NEWS of the TRUCK INDUSTRY •

Chevrolet "National Truck Week"

CHEVROLET announces that its dealers in all parts of the country will present the five Chevrolet truck lines for 1938 in striking showroom displays, during *"National Truck Week"* which the Company is sponsoring, the week of January 10 to 15. . . . This movement will be supported by one of the most extensive advertising campaigns in the history of the industry, according to W. E. Fish, Chevrolet's commercial car manager.

•

Flogaus Now Reo Chief Engineer

REO MOTOR CAR Company announces the appointment of Howard A. Flogaus as chief engineer. . . . Mr. Flogaus, who, until recently, was with Yellow Coach, is one of America's foremost engineers of commercial transportation. . . . The appointment of Mr. Flogaus is but the initial step in maturing further plans for Reo, according to Don E. Bates, president, who predicts striking advancements by the Company in 1938.

•

Fletcher Now Studebaker Sales Mgr.

STUDEBAKER announces the appointment of C. S. Fletcher as sales manager of The Studebaker Corporation, succeeding Louis K. Manley, resigned. . . . Mr. Fletcher, who joined Studebaker fifteen years ago has had diversified automotive experience, including that in foreign countries. . . . Three years ago he joined the general administrative staff of Studebaker as sales promotion manager; last April he was made assistant sales manager. . . . Our best to you, Mr. Fletcher!

•

White Bus Plant Begins Production

COMPLETED at a cost of $425,000, the White Motor Company's new and modern bus body building plant swung into full-scale production last month, as the first of 20 aero-weight, aluminum city transit coaches, recently ordered by the Triboro Coach Corporation of New York City, rolled off the assembly lines. . . . Coach fleet orders totalling $600,000 have also been received from metropolitan operators, the company states.

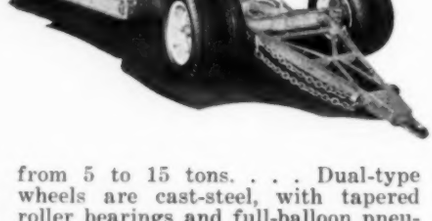
Schaefer Heads Federal Activities

K. M. SCHAEFER has recently been promoted to general sales manager of Federal Motor Truck Company, Detroit, Mich. . . . He will be in charge of all domestic sales and advertising activities. . . . Mr. Schaefer joined Federal recently as assistant to the general manager. Prior to his connection with Federal, he served in various sales and service executive capacities in the automotive industry. . . . Our best to you, Mr. Schaefer!

•

Jahn Offers Machinery Trailers

THE C. R. JAHN Company of Chicago, Ill., announces a new lightweight utility trailer for the transportation of the lighter types of machinery, such as tractors, compressors, pumps, and small shovels and cranes. . . . It will handle loads of



from 5 to 15 tons. . . . Dual-type wheels are cast-steel, with tapered roller bearings and full-balloon pneumatic tires; either four or six wheels are available. . . . Equipment includes loading ramps, lash-rings, reflectors, flag-sockets and safety-chains. . . . Full details will be sent by the maker. . . . Mention of FLEET OWNER always helps.

•

W.P.A. Truck Purchases and Rentals

MOTOR trucks valued at $1,275,273 were among the nearly one-half billion dollars worth of materials, supplies and equipment purchased for projects of the Works Progress Administration in the first 26 months of its operation, up until September 1st, 1937, according to the records of the WPA Division of Research. Statistics and Records. . . . This expenditure was in addition to the sum of $169,539,836 spent in the same period for rental services of trucks and vans, and of $4,332,547 spent in the rental and services of buses and autos.

Tractor Works Near Completion

INTERNATIONAL Harvester Company announces that completion of a large addition to its tractor works at Chicago is expected by May 1, next. . . . The new addition, with buildings and equipment, will cost in excess of $1,000,000. . . . The construction job, now under way, when completed will make the company's Chicago tractor works one of the world's largest tractor manufacturing establishments.

•

Davis Named Regional Head at Atlanta

STUDEBAKER announces the appointment of Paul R. Davis as regional manager in charge of their Atlanta, Ga. branch, succeeding M. S. Mentzer, resigned. . . . A native Southerner, Mr. Davis' new headquarters are The Studebaker Sales Corporation, 560 West Peachtree St., N. W., Atlanta, Ga.

•

Ford Transit Bus Sales Increase

FORD Motor Company reports that sales of the Ford Transit Bus are on the increase. In one week recently, orders were received for 65 buses from sources located in widely separated sections of the country. . . . Heading the list was an order for 30 buses from the Peoples Motor Bus Company, St. Louis, Mo. . . . Next was an order for eight buses received from the City of Alexandria, La.

•

Warner Appoints Coast Distributor

WARNER Electric Brake Company, Beloit, Wis., announces the appointment of Pacific Wheel & Rim Service as Pacific Coast distributors of Warner Electric Trailer Brakes, with offices at 63 Bluxome St., San Francisco and at 324 Venice Boulevard, Los Angeles, Calif.

•

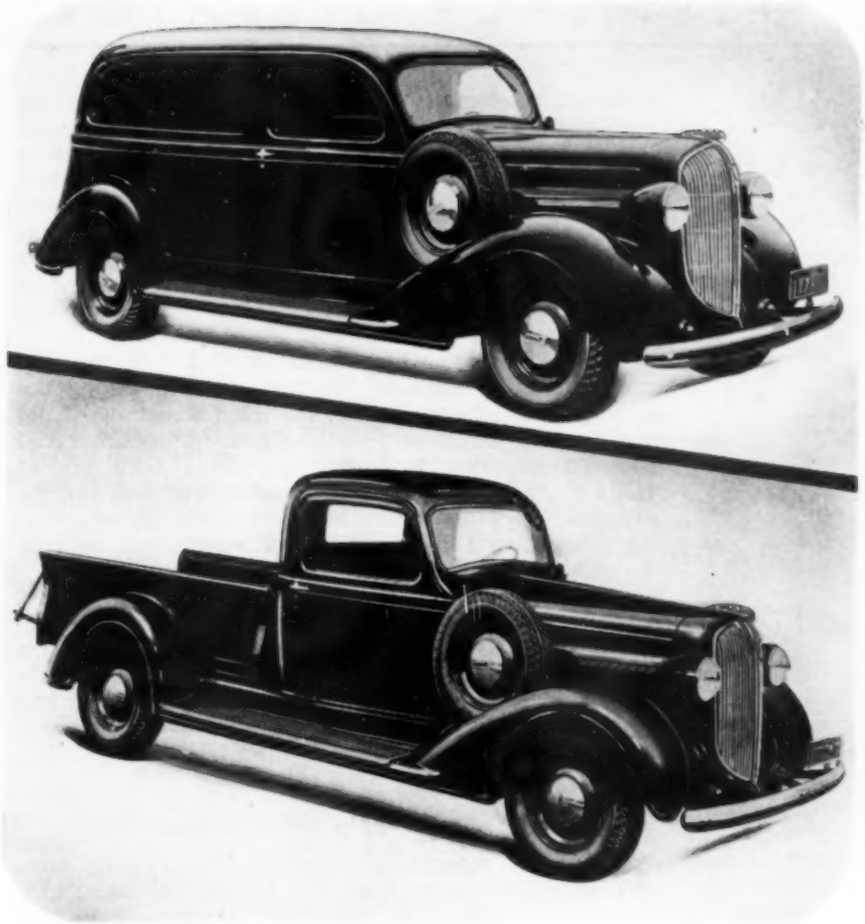
New Studebaker Appointments

GEORGE D. KELLER, vice-president in charge of sales of The Studebaker Corporation announces two appointments to his staff at the home office in South Bend, Ind. . . . They are: Walker G. Everett, as editor of *"The Studebaker Wheel,"* and Wm. H. Bingham, who joins the sales promotion department of the Studebaker Truck Division. . . . Both gentlemen have had extensive experience in their respective lines.

•

Kingham Trailer Reduces Prices

EFFECTIVE last month, a reduction in prices amounting to approximately 10 per cent was made on Kingham trailers and trailer bodies, according to E. J. Lucas, sales manager. . . . Mr. Lucas comments as follows, regarding the reduction: "We not only believe that prices have reached the top in our line, but also in many other lines, and that in order to stimulate business and do our part in bringing it back to normal, a reduction is in order."



Plymouth Announces 1938 Commercial Cars

A NEW line of commercial cars for 1938 was announced last month by the Plymouth Division of the Chrysler Corporation, Detroit, Mich. Production on the new line is already under way, and sample cars have been shipped to Plymouth dealers throughout the country, according to the manufacturers.

Plymouth commercial cars were first introduced last year in response to increasing demands by American business men. Again for 1938, Plymouth commercial cars are available in three different models; a smartly-styled Commercial Sedan with 105 cubic feet capacity, a Commercial Pick-Up Truck with all-steel express box body, and a Commercial Car Chassis-with-Cab, on which the user can mount the particular type of special body best suited to his requirements.

All models are mounted on a special commercial car chassis of 116-inch wheelbase, designed from the ground up for commercial use, the engineers state. Structural foundation of this chassis is a truck-type frame with side channels 6 inches deep and five cross-members, including a rear engine support cross-member, for extra strength. The engine is Plymouth's own L-head design, and delivers 70 horsepower at 3,000 r.p.m.

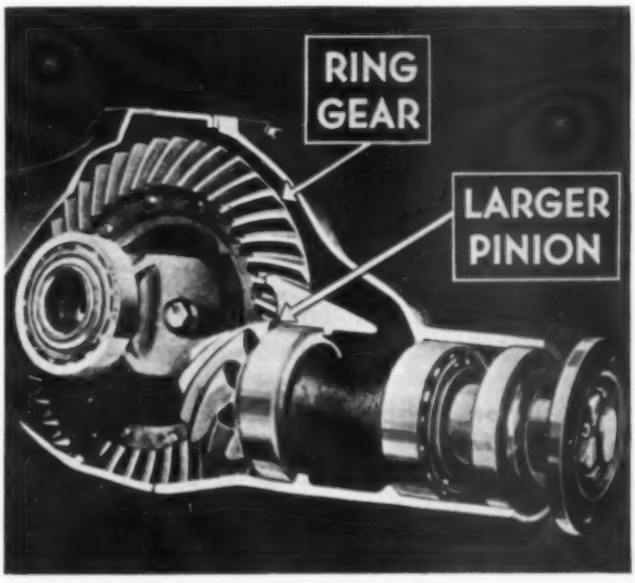
The Plymouth commercial car power plant offers all the special engineering features which characterize Plymouth. The list includes a high compression ratio of 6.7 to 1 with calibrated ignition for maximum power with ordinary gasoline; hard, heat-resisting valve seat inserts; light-weight aluminum alloy pistons with four rings; and a score of others.

The heavy-duty transmission has five ball and roller bearings. Rear axles are of the new hypoid type. Plymouth hydraulic brakes are used in all of these commercial jobs.

In recognition of the commercial car user's need for equipment that commands attention and adds prestige to his business, the 1938 Plymouth commercial cars offer the smartness of modern styling, with no sacrifice of the carrying space provided by all models, the factory points out.

For maximum safety, all bodies and cabs are of solid steel construction. Driver's compartments are roomy and comfortable without sacrifice of load space. In the Commercial Sedan, the load compartment is open behind the driver's seat and is easily accessible from the front for side unloading, or through a large steel door at the back.

(*Please turn to page* 64)

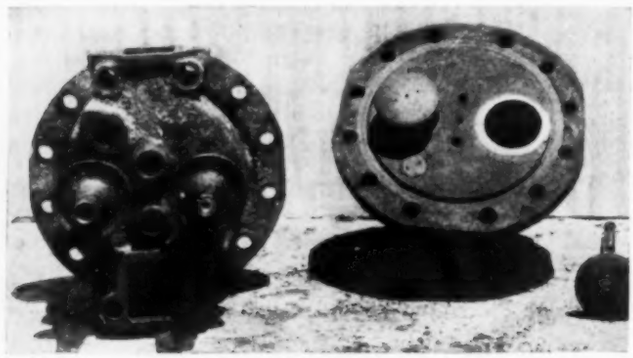


The hypoid rear axle, used on the Plymouth 1937 commercials, will be continued for 1938. This view shows how the drive-shaft enters the axle housing at a low point, thus eliminating the necessity for a tunnel in the low floor.

SHOP HINTS *for* FLEET SHOP OPERATORS

Hard-Facing Solves Valve-Seat Problem

A FLEET maintenance man who also has charge of plant maintenance for a large plant in Oklahoma, experienced considerable valve and valve-seat difficulties on several stationary engines which burned natural gas as a fuel.



Internal combustion engines burning natural gas require a critical selection of materials in their vital parts. In choosing the material for the seating surfaces of natural gas engine exhaust valves, such a selection is particularly important. The corrosive action and heat of the burning gases are extremely hard on ordinary materials. In addition, wear, resulting in the valves' pounding in, also puts a limitation on the choice of materials, especially since the temperatures in a combustion chamber are so high that some metals begin to soften under such service.

There were eight of these gas engines in this man's plant, and the above factors limited the life of cast iron valve seats and special seat inserts to from 6 weeks to 3 months. This costly maintenance problem has now been solved. Exhaust valve seats of low carbon steel, hard-faced with an extremely wear-resistant alloy of cobalt, chromium and tungsten now last from 12 to 16 months under the same service.

Solid cast bushings of this same hard alloy also are used as valve guides in the same engine. Although these valve guides have been in service for over two years, they show no signs of wear whatsoever, we are told.

The non-ferrous alloy used in both of these applications has been found to fit these requirements admirably. Inherently hard, it retains its hardness throughout the red heat range. It is one of the most abrasion-resistant materials possible for such service. It takes a high polish that does not gall or seize. It is applied in the usual manner to the exhaust valve seats by the welding process, and the welded deposits are easily ground by means of recently developed precision grinding equipment.

●

How to Minimize "Vapor-Lock"

ANY golfer knows that a missed two-foot putt can destroy the advantage of a 250-yard drive. . . . Also, any driver who has had his vehicle stopped suddenly by vapor lock, knows that he can be made to look just as foolish as a golfer missing a short putt.

Doubtless many drivers have had vapor lock without knowing what it was. Vapor lock is the forming of a pocket of vapor in the fuel line. When vapor lock occurs, usually it is in that part of the fuel system between the fuel pump and the carburetor. It is caused by the fuel becoming so hot that it vaporizes before reaching the carburetor jets. When the temperature is high enough to induce continuous vaporization of the fuel before it reaches the mixing chamber, one of three misfortunes overtakes the driver: his engine misses and runs erratically; he stalls; or, when he stops after a high speed run, the vehicle will not start at once.

Various remedies have been applied from time to time, including running the fuel line pipe along the outside of the frame so that the wind stream will cool the fuel as much as possible before it reaches the fuel pump. But with the increasing tendency of fuels to vaporize at lower temperatures and the increased heat under the hood, even these measures have been found inadequate under severe driving conditions in extreme hot weather.

Pontiac engineers recommend lowering the pump, and in addition inverting it so that the fuel bowl actually projects below the engine side-pan. In this position (on 1937 Pontiacs) the pump is moved eight inches further away from the exhaust manifold and the fuel bowl is below the hot engine compartment and partially exposed to the cooling-fan blast.

●

"Utility Buggy" Fabricated in Fleet Shop

THE shop foreman of a large fleet of heavy-duty units needed some sort of a dolly, or "utility buggy" for the speedy transfer of heavy parts such as axles, engines, bodies, etc., around the garage and shops. After a little of ingenious planning, he made the job shown in the accompanying illustration.

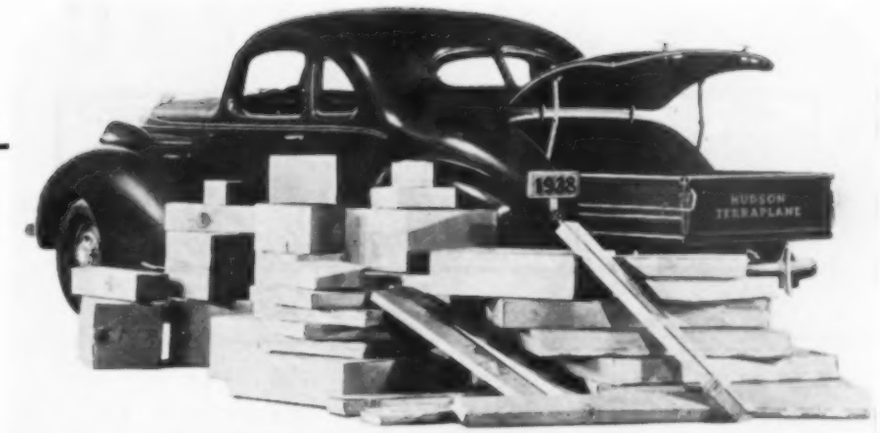
This all-welded "utility buggy" is a splendid example of what can be done with welding apparatus and a few odd lengths of pipe and angle-irons.

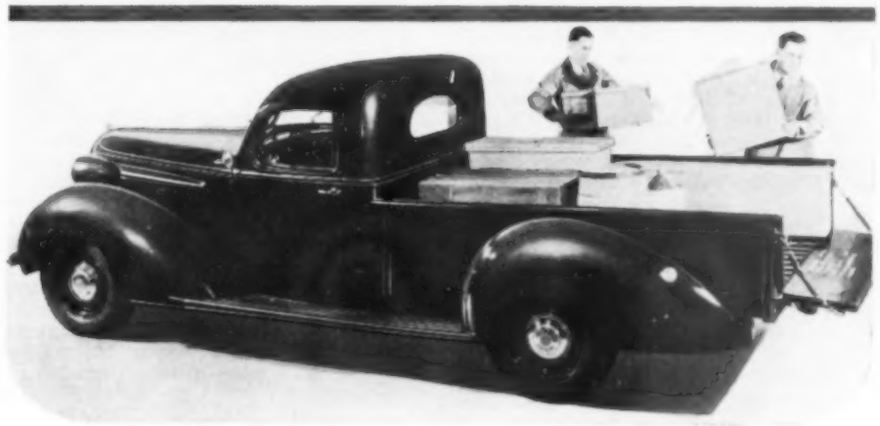
It is designed to carry loads up to 1,000 lbs. in weight. Where truck bodies are to be carried, two of them can be used. Standard welded pipe-joint design was followed in the construction of this piece of equipment.

●

Newspapers Extend Use of Trucks

USE of motor vehicles by daily newspapers in making deliveries is among the safest types of automotive operations, it is revealed by a survey based upon reports from newspaper executives in all parts of the country and conducted by the National Highway Users Conference. The number of newspaper-truck accidents has been reduced by two-thirds during the past five years, the survey shows.



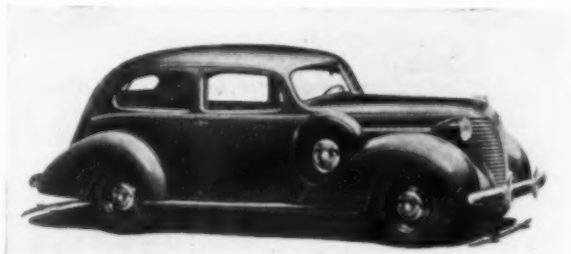


Hudson Announces 1938 "Commercials"

THE HUDSON Motor Car Company announces seven business cars for the 1938 season. They are all mounted on the six-cylinder Hudson Terraplane Chassis which this year is stronger, more rigid and rugged than previously, according to the makers. It has a three-quarter ton capacity rating and is provided in optional gear ratios which adapt it to many commercial purposes within its capacity.

The seven models include a Utility Coach; Utility Coupe; Custom Panel Delivery; Cab Pick-up; Taxicab; Station Wagon, and a Chassis-with-Cab. These cars are mounted on wheelbase lengths of 117 or 124 inches and are equipped with a 96-horsepower engine; a 102-horsepower engine is also available as an option, through the use of a special high-compression aluminum "super-power-dome" cylinder-head.

The Hudson Terraplane Utility Coach, which provides a combination of business and pleasure vehicle in a single car is mounted on a 117-inch wheelbase. It has a capacity of 1,000 pounds. The car is readily convertible. It has a two-door body with divided front seat. The right-hand front seat and the rear seat are readily removable, giving an ample amount of loading area in the vehicle. This car can be loaded both from the side and rear through the baggage compartment door. It has a width at the belt of 58½ inches and at the floor, 53 inches. The rear load door is 29 x 44 inches. When the rear seat and the right front seat are taken out, there is a single large space of over 10 feet long available. The distance from the back of the driver's seat to the rear door at the floor is 79 inches. With the seats in position, the car has a six-passenger capacity and from its exterior gives all the appearance of a straight passenger car.



FOUR illustrations of the new Hudson "Commercials" for 1938 are shown on this page. . . . At the top of the page (right, above) is the Hudson Terraplane Utility Coupe. . . . Directly below it is the Cab Pick-Up. . . . The two smaller pictures, immediately above, are representative of the new Hudson Terraplane Taxicab, and the new Custom Panel Delivery Car for 1938. . . . Complete specifications are given in the text accompanying.

The Utility Coupe, in its exterior appearance, is a regular passenger coupe. However, when the rear baggage door is lifted, a steel pick-up box body may be rolled out at the back of the car, giving a loading space 49¼" x 38" wide and 11⅝" deep. It is adjustable to three positions, and has a tail-gate. This car is provided on a 117-inch wheelbase chassis.

The Hudson Terraplane Custom Panel Delivery car is available in two wheelbases, 117 and 124 inches. It has a capacity of 1,500 pounds and is quite smart-appearing. It is said to be easy to load, since the loading space is only 27¾ inches from the ground. The cab and body are of all-steel construction. This model has a door-opening of

(*Please turn to page* 64)

Hossellman Elected N. S. P. A. Head

V. C. HOSSELLMAN, manager of Siferd-Hossellman Company, Lima, Ohio, was elected President of the National Standard Parts Association for 1938 at the Association's 14th annual convention recently held in Chicago. . . . L. G. Matthews, Sealed Power Corporation, Muskegon, Mich., was elected senior vice-president, and the choice for junior vice-president was V. C. Anderson, president, Motor & Axle Parts Service, Inc., Chicago, Ill.

•

New Auto-Lite School for Service Men

ELECTRIC Auto-Lite is now conducting a school for automotive electric service men at its home plant in Toledo, Ohio. . . . Each course lasts three weeks and covers all phases of automotive electrical equipment. The school is free to employees of Auto-Lite distributors, dealers and service stations and also to employees of fleet operators. . . . The school goes into all phases of automotive electricity, including ignition, starting, lighting and generators. . . . This looks like a good opportunity for fleet operators to get some fine training for their electrical service men. . . . For further details write to Electric Auto-Lite Company, Toledo, Ohio. . . . Mention of FLEET OWNER is always appreciated.

•

K-D Holds Sales Convention

THE K-D Lamp Company, Cincinnati, Ohio, held its annual sales convention recently. Representatives from all parts of the country, as well as from their export division, were present. After a trip through the factory, H. R. Kerans, president, addressed the gathering, reporting the largest business in the history of the company, with an imposing back-log of orders for 1938.

•

Gray Heads Highway Users Conference

CHESTER H. GRAY, formerly Washington representative of the American Farm Bureau Federation, assumes the responsibities of Director of the National Highway Users Conference, according to a recent report. . . . Major Roy F. Britton, who has been Director since the inauguration of the Conference in 1932, now retires.

Frank N. Smith Joins Chicago Jobber

HIBBARD, Spencer Bartlett & Company, Chicago, announce the appointment of Frank N. Smith, lubrication engineer, as manager of their Fleet Engineering Service in their automotive sales division. . . . The latter division is a new department for this progressive house, with a background of over 80 years' successful business experience. . . . Mr. Smith will collaborate with F. G. Russell, vice-president and P. R. Wilson, manager of motor oil sales. . . . Mr. Smith's experience in the automotive industry dates back to 1921, he having represented many major oil companies in the United States, Canada and Mexico.

•

U. S. Rubber Personnel Change

THE Mechanical Goods Division of United States Rubber Products, Inc., has announced that Frederick D. Benz, formerly Manager, Wire Sales, Chicago Branch, United States Rubber Products, Inc., has been appointed District Manager of Wire Sales, Pacific Division, for the same company, with headquarters at San Francisco. . . . This Division comprises the Los Angeles, San Francisco, Portland, Seattle, Spokane and Salt Lake City territories.

•

Jones Directs Ethyl Safety Activities

ETHYL Gasoline Corporation announces that Ellis O. Jones, Jr., of New York, has been appointed to direct the safety activity of the Ethyl Gasoline Corporation on the West Coast, with headquarters in Los Angeles. . . . His field will be co-extensive with the Corporation's Los Angeles division, which embraces California, Arizona, Idaho, Nevada, Oregon, Utah and Washington, and of which S. M. Wagner is manager.

•

A.P.I. Reelects All Officers

ALL OFFICERS of the American Petroleum Institute were reelected at the 18th Annual Meeting of the Institute, held November 8 to 12 at the Stevens Hotel, Chicago, Ill. . . . The executive committee selected Wichita, Kans., for the 8th mid-year meeting to be held May 11 to 13th, 1938; and the Stevens Hotel, Chicago, for the 19th annual meeting, to be held November 14 to 18, 1938.

Buda Offers Two New Gasoline Engines

TWO NEW models of gasoline engines are announced by The Buda Company, Harvey, Ill. These are known as the M-707 and M-766. . . . Both are 6-cylinder engines with overhead valves. . . The M-707 has 5-inch bore and 6-inch stroke, with 707 cu. in. piston displacement. . . The M-766 has 5½-inch bore and 6-inch stroke, with 766 cu. in. piston displacement. . . These two engines are built for various types of installations, including shovels, cranes, draglines, hoists, heavy-duty trucks, stationary and portable compressors, pavers, crushers, locomotives and rail-cars. . . For literature address The Buda Company, Harvey, Ill. . . Mention of FLEET OWNER is always appreciated.

•

New Office for The Linde Air Products Co.

THE Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, has signed a contract for the occupancy of a new, fireproof office building at 729 North Pennsylvania St., Indianapolis, Ind. . . . The new building, a 2-story structure, will provide space for the Linde District Office, and a repair and service station for Oxweld oxy-acetylene welding and cutting apparatus.

•

New "Hypressure Jenny" Distributors

FOUR more firms have recently been appointed as distributors of "Hypressure Jenny" steam vapor spray cleaners, made by Homestead Valve Manufacturing Co., Coraopolis, Pa. . . . They are: Dyke Motor Supply Co., Pittsburgh, Pa.; City Auto Parts, Worcester, Mass.; Cole Brothers, Nashville, Tenn.; and Automotive Supply Co., Appleton, Wis. . . . These firms will contact fleet owners, bus companies, car dealers, garage owners, etc.

•

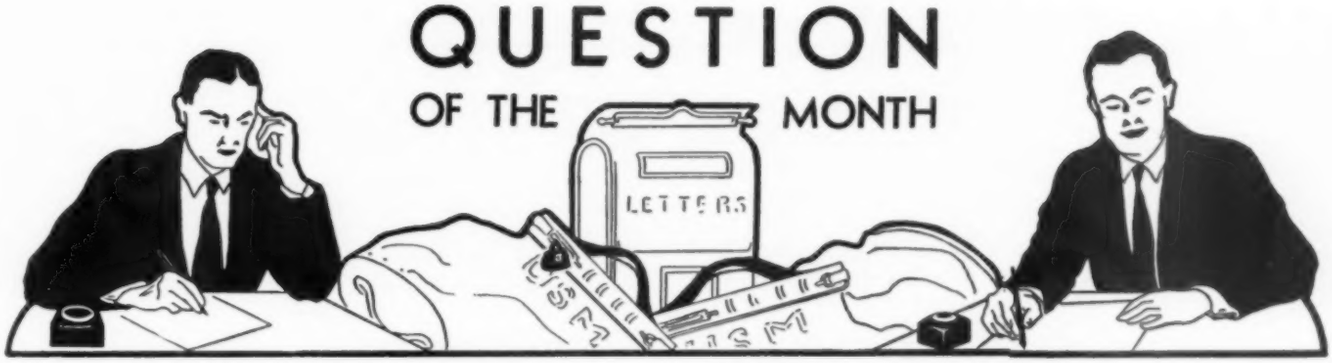
Lincoln Opens Atlanta, Ga., Office

LINCOLN Electric Company announces the opening of a welding sales-engineering office at Atlanta, Ga., located at 412 Title Bldg., and under the management of Robert Daniels. . . . Arc-welding equipment, including arc-welders, electrodes and accessories, together with electric motors, will be available there for users. . . . Mr. Daniels is a competent welding engineer and will be glad to render advice and information without obligation.

•

"Wisconsin Truckers' Protective Association"

JOSEPH J. DAHM, Clintonville, Wis., president of the Clintonville Transfer Line, Inc., is the leading figure in a movement to organize a statewide association of the "little fellows" in the trucking field. . . . As originator of the plan to incorporate the "Wisconsin Truckers' Protective Association", Dahm, with fellow truckers in central Wisconsin, plans incorporation of the group, and is directing the informal preliminary organization toward a permanent basis.



Fleet Experiences *with Reference to* Engine Lubrication

(Here's How You Can Get the Complete Picture on this Controversial Subject:)

THIS MONTH we are taking up the subject of Lubrication. The questionnaire below is the only practical means that we can employ to gather the necessary data from all sections of the country at one time. It is the first step!

In order to receive the complete data which this questionnaire will bring, it is necessary that you participate in our survey, by tearing out the blank, filling in the answers to as many questions as you can (or as you care to) and mailing it back to the Editor.

In return for a few minutes of your time, you'll get a private and personal copy of the summary, giving a representative picture of the subject under discussion. Your name is never mentioned in these surveys. Thanks, a lot, for your cooperation.—H. C. F.

(Please tear out and mail to The Editor, The Fleet Owner, 90 West St., New York City)

Question No. 84—Engine Lubrication

When oil-filters are used, how often do you change oil? ..... Miles; —or— ..... Days.

When oil-filters are NOT used, how often do you change oil? ..... Miles; —or— ..... Days.

About how many gallons of motor oil do you use per month for your own fleet? ..... (Gallons, avg.)

Do you keep accurate records of oil consumption and costs? ☐ Yes; ☐ No;

If so, what percentage of your total maintenance cost does motor oil represent? ..... %

How is motor oil purchased for your fleet? (Please check below)

☐ On contract —or— ☐ In open market.
☐ From refiner —or— ☐ From distributor —or— ☐ From service station —or— ☐ From Automotive Jobber.
☐ In barrels —or— ☐ In sealed cans —or— ☐ Delivered into own tanks.

What was your average cost per gallon, of new oil, during 1937? ..... (ABSOLUTELY CONFIDENTIAL)

When purchasing oil, which do you consider more important? (Please check ONE)

☐ Reputation of oil refiner; ☐ Type of crude used.

What basis is used for the selection of motor oils? (Please check ONE)

☐ First cost; ☐ Performance of oil; ☐ Performance and cost combined.

What brand or brands of motor oil do you prefer? ..... (ABSOLUTELY CONFIDENTIAL)

Has the use of oil-filters enabled you to reduce your oil costs? ..... If so, how much? ..... %

What do you do with crankcase drainings? ☐ Reclaim; ☐ Sell; ☐ Discard? Other uses? .....

If reclaimed, what make of reclaimer is used? ..... What is TOTAL cost of reclaiming? ..... per gal.

What methods do you use to determine the relative merits of different brands of oil? (Please explain) .....

.....

.....

Remarks .....

.....

.....

How many vehicles in your fleet? (Please indicate below)

Trucks ..... Tractors ..... Trailers ..... Pass. Cars ..... Buses ..... Miscellaneous .....

***Note:** If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.*

Swap your transportation experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm .....

Address .....

City and State .....

Your Name .....*Position*.....

Uses Telescopic Ladder on Pick-Up Truck

ONE of the most unusual services performed with a commercial pickup has recently been started in Toledo, O., by the city's department of public safety in its maintenance and repair of fire and police alarm systems. This truck is a standard Dodge half-ton pick-up upon which has been mounted a special telescopic ladder which elevates at an angle and revolves on a steel base.

The ladder is known as a "crow's nest" and is 24 feet long when extended and 12 feet in length when folded in traveling position.

When the ladder is elevated to the proper angle and swung around to the desired position, it is then locked securely in place, a factor which gives rigidity equal to it being an integral part of the truck. Placing it in the right position requires but a few seconds.

Utilization of this ladder permits the truck to drive up alongside of parked automobiles and extend the ladder over the roof of the one between it and the pole on which a traffic light is to be repaired. The truck is driven continuously in daylight hours and is used during the night on practically all emergency calls which require its service.

Cabinets for carrying wire, tools and miscellaneous supplies are built into the sides of the body and have doors on the outside for greater accessibility. Upon the top of the cab is a spotlight which is used for tracing wires at night.

●

A.S.T.M. Offers "Symposium on Lubricants"

THE papers and discussion comprising the Symposium on Lubricants (1937) summarize and bring up to date available information on motor oils and their applications. The symposium is limited to motor car engine lubricants.

The first paper discusses "Engine Deposits—Causes and Effects" covering such subjects as combustion-chamber deposits, valves, ring-clogging and crankcase deposits. The paper on "Automotive Bearings—Effect of Design and Composition on Lubricants" covers lubricating system design, equipment for testing bearings, design factors and composition of bearing material.

Topics discussed in the paper on "Addition Agents for Motor Oils" include oiliness agents, pour inhibitors, viscosity index improvers, anti-oxidants, and carbon removers. "How to Select Motor Oil from the Standpoint of the Consumer" is covered in the fourth paper which points out factors concerning oil viscosity, rate of replenishment, mechanical failure and contamination.

The symposium was developed by Technical Committee B on Motor Oils of ASTM Committee D-2 on Petroleum Products and Lubricants and is a sequel to a similar one held in New York City in 1933. Widespread interest in the subject is evidenced by the considerable discussion which is included in the publication.

Copies of this publication, 89 pages, can be obtained from A.S.T.M. Headquarters, 260 S. Broad St., Philadelphia, Pa., at $1.25 per copy in heavy paper cover; $1.50 in cloth. Special prices are in effect on orders for ten or more copies.

●

Line of Timken Standard Axles Reviewed

DURING the past year The Timken-Detroit Axle Company has incorporated into its standard line of rear driving axles two features which it is claimed, have heretofore been impractical upon a production basis.

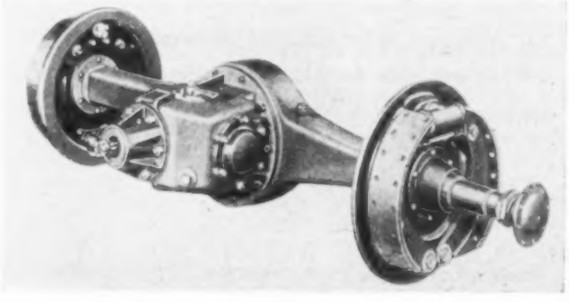
The first of these is a new patented method of protecting the bearing surfaces of ring-and-pinion gear teeth during the vulnerable "breaking in" period. By means of a process known as "Lubri-coting," the gear and pinion teeth are plated with a metallic lubricant which shields the extreme outer surface of the gear face until it has been hammer-hardened in service. By the time the "Lubri-coting" has worn off, the teeth are perfectly mated and the gear and the pinion are ready for extended service, it is pointed out by Timken engineers.

The second feature is the new one-piece, pressed-steel axle housing with rectangular section, which now performs the important load-carrying function of all Timken Axles in the 1½ to 4 ton field. This design of axle housing is produced in three basic capacities to accommodate three types of final drive—the bevel-gear drive, the double-reduction drive, and the 2-speed double-reduction drive.

With each of these axles is offered a choice of brake sizes—and a choice of hydraulic or power actuation.

As a result of this standardization which permits maximum inter-changeability of sub-assemblies among standard Timken driving axles, vehicle manufacturers using these axles are able to fit their equipment to the particular job and hauling conditions of the operator.

The Timken bevel-gear-drive axle is designed for normal conditions, especially where fast rear axle gear-ratios are desired. . . . The Timken double-reduction-drive axle is for maximum pulling-power where speed is not essential. . . . The Timken two-speed, double-



reduction-drive axle (illustrated) is for long hauls requiring top speeds, pulling or hill-climbing ability, and minimum fuel consumption, the maker states.

For further information covering this complete line of Timken truck axles, address Timken-Detroit Axle Company, 100 Clark Avenue, Detroit, Mich. . . . Mention of FLEET OWNER is always appreciated when writing.

NO FOOLING!

THEY'RE NEW - - *and* FREE!

THE following numbered selections have been chosen by Editor Fischer as this month's trade literature offerings. . . . These booklets are GUARANTEED to be interesting and are offered NOT on the basis of producing inquiries for advertisers, but on THEIR OWN MERITS as handy reference data. . . . If you don't believe it, send for a few of them and prove it to yourself. Do not confuse this page with the voluminous conglomerations found in ordinary (the other fellows') magazines. . . . The post-card is for your convenience. No postage required.

383. STATE REGULATION BOOK. . . . When you wish to run your vehicles into other states, you don't have to consult a lawyer or a transportation expert—not if you have a copy of a brand-new and up-to-date booklet entitled *"Truck and Trailer Size and Weight Restrictions."* . . . This is a *real* handbook that covers every state in the Union. . . . To make it "official," each set of state laws is printed on a separate page, and is countersigned by the state motor vehicle official of each state. . . . The book is pocket-size, and without advertising. . . . Number 383 on our post-card brings a *free* copy promptly. No postage stamp is required.

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384. DIESEL ENGINE BOOK. . . . Here's one of the most comprehensive books on the subject that we have ever seen. The title is *"Diesel Engines and Their Lubrication."* . . . Instead of being a puff for someone's engine, or someone's oil, this book is a well-illustrated textbook that every automotive man ought to read carefully. . . . It tries (in plain language) to give you the "low-down" on Diesel engines in *all* types of service, telling just what they are, how they work, what troubles to look for, mechanical problems, etc. . . . Number 384 on our post-card will bring you a copy, without obligation, by mail.

•

385. PAINT SPRAYING HINTS. . . . If you've experienced such pesky paint-gun problems as distorted patterns, spitting, split-sprays, etc., here's a new folder that illustrates and describes these conditions, telling exactly how to go about remedying them. . . . It also gives pointers on how to clean spray-guns, hints on pressure-regulators, hose, thinners, etc. . . . This is *not* a book—just an interesting folder. . . . Number 385 will bring you a free copy promptly. . . . The post-card is for your convenience.

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386. IGNITION QUESTIONS AND ANSWERS. . . . Here's a handy little booklet that lists many popular electrical questions and gives the right answers. . . . Such things as, "Why test ignition first; rather than a vacuum-test?" . . . "Should spark plugs be cleaned before testing the motor?" . . . "Do most condensers leak after being used for a short time?" . . . The booklet also gives 15 "Things That Can Go Wrong" with the ignition system, and explains how one system of Motor Tune-Up should be accomplished. . . . Number 386 on our post-card will bring a *free* copy of this book, promptly . . . It's worth listing here, believe us.

•

387. BRAKE ADJUSTMENTS. . . . Don't let brake adjustments scare you, just because there happen to be a dozen or more different types of brake systems. . . . Here is a new folder that gives *simplified* adjustment procedure (illustrated) for such popular brakes as Bendix Mechanical, Bendix Hydraulic, Lockheed Hydraulic, Ford, Chevrolet, Steeldraulic, etc., etc. . . . This folder looks like it ought to be a very handy piece for your *"Brake"* file. . . . Include Number 387 on the post-card attached, and get a copy; free, gratis and for nothing.

•

388. STARTING DIESEL ENGINES. . . . Electric starting, of course, is the answer, for automotive work. . . . Here is a new book entitled *"Electric Starting of Diesels,"* which is also worthy of a place in your Diesel library. . . . The book is actually a description of the testing procedure and equipment developed by Exide engineers in applying electric starting to Diesel engines. . . . It also goes into the theory of the Diesel engine—how it has developed—its adaptability—the difference between its operation and that of a gasoline engine, etc. . . . Number 388 brings you a free copy promptly.

•

389. HOW TO MACHINE ALUMINUM. . . . Here is a handsomely-done, 32-page booklet entitled, *"Machining Aluminum."* . . . It also gives pointers on what kinds of drills, taps and dies to use for aluminum and tells exactly how the work should be done, for best results. . . . Machining on the lathe, filing and grinding are also discussed. . . . If your work includes any kind of cutting work on aluminum, the booklet should be a "God-send." . . . Then too, it's free! . . . Just include Number 389 on our post-card, if you want it.

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390. PIPE REPAIR HANDBOOK. . . . Whether you're interested only in exhaust-pipes, steam-pipes, water-pipes or gas-pipes, you'll surely find this book of interest. . . . It illustrates and describes how permanent, *quick*, repairs can be made, especially with the use of clamps of a special type. . . . No tools are required except a wrench or a screw-driver. . . . Number 390 on our post-card will get you a free copy, by mail.

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391. HOW TO USE WRENCHES. . . . That sounds sort of silly; the *real* title of the book is *"How to Select and Use Wrenches."* . . . If you think you know all that there is to know on this subject, perhaps you'll be fooled when you see a copy of this handy, pocket-sized booklet. . . . At any rate, everyone should "brush-up" on his knowledge once in a while. . . . We'll help you, by getting you a free copy of this booklet, if you want it. . . . Just indicate by placing Number 391 on our post-card.

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392. CORROSION-INHIBITOR. . . . A fancy word, which only means "Rust Preventer" or something like that. . . . Now that anti-freeze time is here, it's important to check-up on your cooling systems. . . . This piece of literature describes a product which does *two* jobs at the same time—it CLEANS the cooling system, and it PREVENTS future corrosion, according to the makers. . . . Interesting folders, evidence of efficiency, and proof of use will be sent on request. . . . The request in this case simply consists of your placing Number 392 on our post-card.

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393. FIRE PREVENTION. . . . The title of this booklet is *"Preventing Welding and Cutting Fires."* . . . It gives some sound advice and many hints on handling oxy-acetylene welding and cutting apparatus. . . . The book is sensibly illustrated, and it would be well for every fleet operator to send for a free copy and hand it over to his welding operator. . . . Number 393 on our post-card brings free copies—one or a dozen.

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394. AIR-BRAKES FOR LIGHT TRUCKS. . . . Bendix-Westinghouse (and other manufacturers) now are making complete "packaged sets" of air-brake equipment, so that in a few hours' time, any of your good mechanics can equip your Fords, Chevrolets, Dodges, etc., with air-brakes—just like the big Macks, GMC's, Autocars, Whites, Internationals, etc., are using. . . . We have never mentioned this literature in this department previously—so here it is; just indicate that you'd like a free copy (showing how simple the thing is) by putting Number 394 on our post-card and mailing it. . . . No obligation.

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395. GEAR MANUAL. . . . Provides transmission and worm-gear interchangeability tables for all makes and models of trucks and buses. . . . A master-index makes any model easy to find. . . . Also gives prices on replacement gears. . . . Number 395 on the post-card brings a free copy promptly.

Offers Factory Exchange

A FACTORY rebuilt exchange plan has recently been announced by the Midland Steel Products Co., Cleveland, Ohio, manufacturers of Midland-Christensen power-brake equipment.

Under this arrangement, used power-brake cylinders and valves may be exchanged through Midland's distributors for factory-rebuilt units carrying a new unit guarantee.

For complete details, prices, discounts, etc., address Midland Steel Products Co., 10609 Madison Ave., Cleveland, Ohio. . . . Mention of FLEET OWNER always helps.

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New Welding Electrode

A NEW mild steel arc-welding electrode, designed particularly for use with small alternating current transformer type arc-welders, which is said to simplify welding with this type of equipment and provide weld metal of high quality, is announced by The Lincoln Electric Company, Cleveland, Ohio.

The new electrode, designated "Transweld," is the result of extensive research on the part of Lincoln engineers to develop a rod which would meet the special requirements of small A. C. transformer welders.

"Transweld" has a very heavy extruded coating, giving a very stable arc, easy to strike and hold. Because of its stable arc the electrode permits making welds in smooth well-shaped beads. Another advantage is in regard to slag removal. Slag is easily removed from "Transweld" deposits.

Weld metal produced by the electrode possesses high physical properties. Tensile strength is 75,000 to 85,000 lbs. per sq. in.; yield point 60,000 to 68,000 lbs. per sq. in.; and ductility 20 to 30% elongation in two inches.

"Transweld" is suitable for making all types of welds in flat, horizontal, vertical or overhead position. The electrode operates equally well with direct current of either straight or reversed polarity.

"Transweld" is made in three sizes: 3/32, ⅛ and 5/32-inch. The smaller size comes in 12-inch lengths, the other two in 14-inch. . . . For further details address Lincoln Electric Co., Dept. WW-445, Cleveland, Ohio. . . . Mention of FLEET OWNER is always appreciated.

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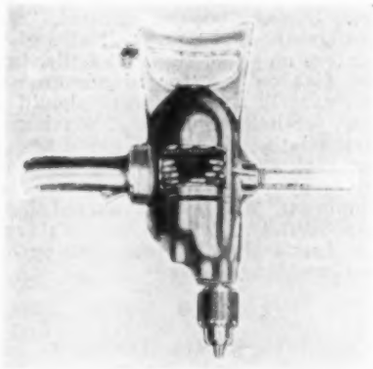
Van Norman Electric Tools

MOST recent addition to the comprehensive line of automotive service equipment made by the Van Norman Machine Tool Co., Springfield, Mass., is a complete line of electric drills (priced from $18.00 up), with a full complement of sanders, grinders, wire-wheel brushes and hole-saws.



These tools are designed for power, smooth performance and longer life. Motors are large, with extra-large built-up commutators. Insulation is heavy. Pigtail brushes are large. Other features include new double-pole, totally-enclosed switches with generous overload capacity, and wider-faced gears. Ventilation is maintained by a centrifugal fan on the armature shaft.

Shown here is the new Van Norman No. 1116 half-inch electric drill, a high-powered tool designed to deliver excellent performance on light-duty or intermittent work.

For interesting literature covering the entire line of Van Norman electric tools, address Van Norman Machine Tool Co., Springfield, Mass. . . . Mention of FLEET OWNER is *always* appreciated. . . . Sometimes it speeds up the service.

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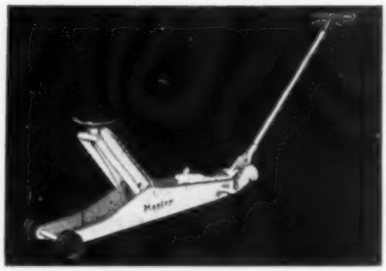
Five New Manley Jacks

FIVE new jacks have recently been added to the Manley line of garage and service station equipment. These jacks have capacities ranging from 1½ to 5 tons. Jacks are all constructed very low to afford ample clearance for low cars. The height of raise on all jacks is 20 inches with the exception of the 3 and 5-ton jacks which have an exceptionally high raise of 24 inches.

The sealed oil reservoirs are one-piece units. These cylinders float in the frames, eliminating all strain when jacks are used on uneven floors. Valve springs have been entirely eliminated as ball valves are all in vertical position. All models are equipped with a quick raise feature with the exception of the 1½-ton jack. A safety lock pin prevents accident lowering. Automatic safety valves prevent serious overloading of jacks beyond their rated capacity.

All jacks are easy to operate and are completely controlled from the handle. They can be lowered slowly, quickly or stopped at any height. Side frames are of the cantilever type, heavily ribbed and of malleable iron for maximum strength and light weight.



Full particulars on these jacks will be furnished by the Manley Manufacturing Division of American Chain & Cable Company, Inc., York, Pennsylvania. . . . Mention of FLEET OWNER is always appreciated.

Weed Chain Pliers

IN ORDER to make cross-chain repairing simple, the American Chain Division of American Chain & Cable Company, Inc., have introduced the new portable plier shown here. It is called "Weed 711 Chain Plier," and is claimed to make repairs right on the spot.

This plier handles all makes and sizes of tire chains. The jaws will open and close the smallest and the largest cross-chain connecting links. Operation is simple and quick, the makers claim.

It measures about 2½ feet from head to handle. A pound of pressure on the handles becomes equal to 40 pounds in the tool head.

The working head is made of nickel molybdenum steel, drop-forged and heat-treated. Safety features are said to prevent bruised hands during tire chain repair work.

For complete details, circulars and prices, address American Chain Division, Bridgeport, Conn. . . . We always appreciate it when you mention FLEET OWNER.

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"Kopper-Kote" Cable

A NEW line of "Wiry Joe" spooled cable and ignition cable sets is being introduced by The Crescent Company, Pawtucket, R. I. The trade name is "Kopper-Kote."

This new type of cable is made for both high and low tension uses and also for lighting cable. The copper

wire is rubber-insulated and then covered with a cotton fabric impregnated with copper cable "dope." The finish is distinctively copper-colored.

The makers state that the rubber insulation of this new cable will withstand 30,000 volts, and that the cotton braid and cable "dope" protect the rubber from all injurious agents. Sixteen gauge is the standard size of the new wire.

For further details address The Crescent Company, Pawtucket, R. I. . . . Mention of FLEET OWNER always helps.

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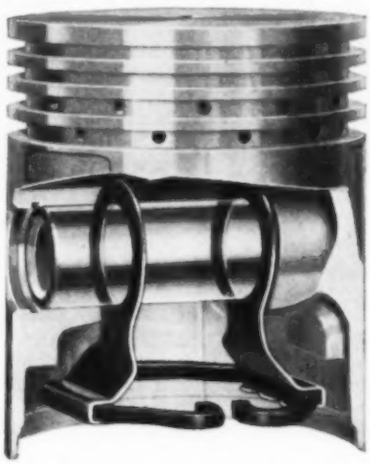
Ramco Skirt Expander

A NEW piston skirt expander is announced by the Ramco Organization, embodying a unique construction, as shown in the accompanying illustration.

The expander proper is held at right angles to the wrist-pin and parallel with the top and bottom of the piston, directing the thrust force exactly against the collapsed portion of the piston.

When delivered to the user, the ends of the expander are clipped together and the installation is made by dropping the expander in the piston, with the pin removed. The pin is then inserted through the predetermined openings in the lobes of the expander, the clip is removed, and the expander functions.



Another new member of the Ramco line—a new piston ring—was scheduled to be shown for the first time at the Automotive Service Industries Show in Chicago, December 6 to 11 last.

For further details address Ramsey Accessories Mfg. Corp., Forest Park Blvd., St. Louis, Mo. . . . We always appreciate it when you mention FLEET OWNER.

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Arkansas Installs Bear Equipment

SINCE the recent passage of the Arkansas Safety Law, 31 municipalities in that state have made arrangements to have official testing stations for motor vehicles. . . . Of these stations, about 75 per cent have purchased Bear testing equipment, according to officials of Bear Manufacturing Co., Rock Island, Ill. . . . This includes wheel aligners, tire-scuff detectors, headlight testers, brake testers, etc. . . . Sales were made through Ozburn, Crow & Yantis Company, whose three divisions operate 43 stores in the South Central section of the United States.

Mammoth Chain Plier

THE McKAY Mammoth Chain Plier, illustrated here, though developed for truck use, can also be used in opening and closing cross-chain hooks for all types of tire chains, large or small.

In operation, one handle is placed on the floor, ground or bench and a simple up-and-down motion opens or closes the hooks. With one handle resting on the floor, the head is so designed that the openings are at just the right height. The parrot-jaw does the opening and the notched-jaw does the closing.

Jaws are of electric-furnace alloy steel, drop-forged and heat-treated. For further details, prices, etc., address The McKay Company, McKay Building, Pittsburgh, Pa. . . . Mention of FLEET OWNER is always appreciated.

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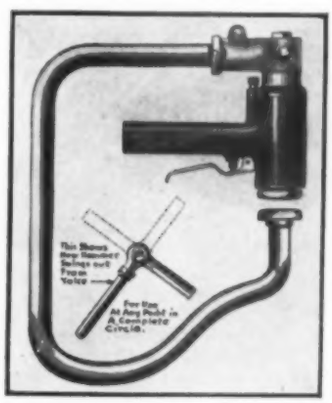
Seiden Pneumatic Hammer

THIS is a combination roughing and finishing hammer which delivers about 6,000 hard blows or fine vibrations per minute, as desired, on 60 to 90 pounds of air pressure. It is designed especially for body and fender work.

The trip-hammer action, controlled by the operator, enables him to adapt the blows of the hammer to the heavy, medium or light gauge of the metal upon which he is working.

The Seiden hammer can be purchased separately, for use with present dolly blocks, or it can be obtained complete with four flexible yokes and six hardened, specially-shaped anvils. The flexible yokes absorb the vibration, and are so shaped that, in conjunction with the swiveled hammer, one man can reach into and service



any spot in body or fender, the manufacturers state.

A new bulletin has been issued, illustrating and describing this new tool. For your free copy write to The Tomkins-Johnson Co., Jackson, Mich. . . . Mention of FLEET OWNER speeds up the service; we appreciate it, too.

K-D Electric Flare

A NEW product of the K-D Lamp Company, Cincinnati, Ohio, is the electric flare illustrated here.

This is designed for use on vehicles where flares with open-burning flames are not permitted, or for users who prefer electric flares.

The new flare is moisture, dust and fool-proof, with fresnel-type lens, such as used in light-houses, emitting horizontal ribbons of light, affording maximum visibility at long range or close-up.

The lens holder fastens to the flare against a cork gasket, forming protection against vibration, handling, dust or moisture. Switch is such that shaking or vibration cannot cause flare to light, except when turned on.

Body is drawn in one-piece with rolled rim bottom, to withstand damage if dropped or hit by passing vehicles. It will burn continuously or intermittently for over 60 hours.

This flare is also equipped so that flag-holder and flag may be snapped over the top of the lens. Finish is red enamel. Special container is available with strong handle for carrying or attaching to vehicle. . . . For further details address K-D Lamp Company, Cincinnati, Ohio. . . . Mention of FLEET OWNER always helps.

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Durakool "Tip-Over" Switch

BECAUSE many costly truck fires follow tip-overs and because most of these fires are started by a spark from the ignition circuit, Durakool, Inc., 1084 N. Main St., Elkhart, Indiana, has just come on the market with a new device designed to cut off the ignition of a motor vehicle when the vehicle turns over or tilts more than 45 degrees.

The device, known as a "Tip-over Switch," contains two Durakool metal mercury switches which cannot break under the most severe treatment because they contain no fragile material.

Inside the switches, in addition to the liquid mercury which breaks contact upon tipping, is a "fill" of non-conducting liquid which floats on top of the mercury and keeps it from splashing on rough roads, besides flowing into the break when the circuit is open, thus quenching the arc.

The Tip-over Switch is adapted for installation in the ignition-circuit of any gasoline-propelled vehicle, and full instructions accompany each switch. Installation is simple and can be accomplished in less than twenty minutes. . . . For interesting literature, prices, fleet discounts, etc., address Durakool, Inc., 1084 North Main St., Elkhart, Ind. . . . We always appreciate it when you mention FLEET OWER.

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New Boring-Bar

THE NEW "Per-Fect-O" portable boring-bar, recently announced by Van Norman, is a heavy-duty bar that can take large cuts at high speed; it is light enough to be handled by one man, no helper being required to put it on the block, locate the anchor, center it, and clamp it to the block.

It is equipped with ½ h.p. capacitor-type motor, turning up 3,400 r.p.m.

The bar will bore or sleeve any block from the 60 h.p. Ford (2.6" diameter) up to and including 5-11/32". Two speeds and two feeds make it possible to take large cuts for sleeves.

A heavy-duty tool bit is standard equipment, having more tungsten carbide in its composition and greater life. Bushings and bearings are lubricated for the life of the bar. Gears operate in a totally-enclosed, sealed oil-bath.

Like all other Van Norman boring-bars, the new one (No. 777) has the patented Van Norman catspaws that center the bar and guide it all the way down the cylinder; also all other Van Norman features.

For complete information address Van Norman Machine Tool Co., Springfield, Mass. . . . You'll mention FLEET OWNER, when writing, won't you?

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Eclipse Air Brush in New Factory

ECLIPSE Air Brush Company, Inc., announces the removal of their office and factory to 390 Park Avenue, Newark, N. J., after 29 years in downtown Newark. . . . The building formerly occupied by Eclipse was damaged by fire recently. . . . Production and shipping schedules are being maintained from the Park Avenue address, the Company announces.

"Beacon" Bulb Kit

TO THE already large and popular line of automotive accessories produced by Dietz, the new "Dietz I.C.C. Beacon Bulb Kit" has recently been added. See accompanying illustration.

This kit consists of a nicely moulded steel case, with lid and clasp. It measures seven inches long, 2⅝ inches wide and 2 inches deep, holding six bulbs. The case is attractively finished in aluminum color.

For further details address R. E. Dietz Company, 60 Laight St., New York, N. Y. . . . We always appreciate it when you mention FLEET OWNER.

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Sands, Rubs, Polishes

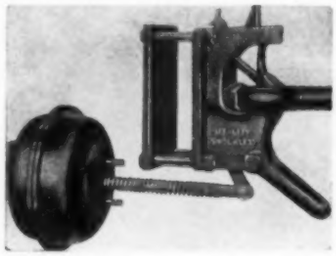
HERE is a new tool for the repaint or refinishing shop, called the "Tu-Spede" Sander, Rubber and Polisher, offered by the James Clark Jr. Electric Company, Louisville, Ky.

Especially designed for sanding, rubbing and polishing, this tool is also adaptable for "hard-to-get-at" drilling work. The speed of the machine can be quickly changed by means of a simple, fool-proof gear-shift, which gives a low speed of 1,000 r.p.m. for rubbing and polishing work; and a high speed of 3,800 r.p.m. for sanding or drill work. A ⅜-inch drill-chuck is provided.

The "Tu-Spede" machine is available in two sizes—a "standard" model for intermittent work, and a "special" model for the larger jobs where continuous, every-day work is required. Weight is only 12¾ pounds. . . . For further information and literature address James Clark Jr. Electric Co., 640 Bergman St., Louisville, Ky. . . . Ask for Bulletin No. 1002. . . . We always appreciate it when you mention FLEET OWNER.

Utility Towing Hook

UTILITY Trailer Manufacturing Co., Los Angeles, Calif., announces a new towing hook, illustrated here. It is called the Utility "Shockless" Towing Hook.



This hook is of standard pintle-hook dimensions and no special trailer tongue is required. It will operate with vacuum, compressed air, or simple spring power for the shock absorber.

After the first one hundred hooks of this type were put into field use, the following remark is typical of comment consistently received: *"Pulling my trailer with this shockless hook is just like driving a truck bobtail. With this hook I often have to look back to make sure that my trailer is still with me. Pulling a loaded or empty trailer with this hook, you can neither feel nor hear the connection."*

This towing hook is designed primarily for full-trailer operation on heavy-duty units. For complete details address Utility Trailer Mfg. Co., P. O. Box 1407, Arcade Station, Los Angeles, Calif. . . . Mention of FLEET OWNER is *always* appreciated..

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Free Book on Body-Steels

ENTITLED "USS COR-TEN—The Low-cost, High-strength, Corrosion-resisting Steel of Many Uses," a new booklet has recently been published by the United States Steel Corporation Subsidiaries.

This 68-page book on the new low-cost, high-tensile steel—USS COR-TEN—is attractively printed in two colors. Included in this book is a presentation of the 19 advantages that USS COR-TEN Steel offers to railroads and other industries. Many illustrations, tables and factual data on typical installations show how the use of USS COR-TEN has eliminated dead-weight and put light weight construction on a self-liquidating basis by increasing payload capacity.

The atmospheric corrosion-resistance of USS COR-TEN is discussed, and a section of the book is devoted to the fabricating technique to be employed with USS COR-TEN, a steel which can be fabricated by ordinary shop methods.

Another valuable feature of the book is a complete list of industrial applications of USS COR-TEN, and a bibliography of technical references.

For your free copy of this interesting, valuable and most elaborate book, write directly to U. S. Steel Corporation, Automotive Division, 434 Fifth Ave., Pittsburgh, Pa. . . . Mention of FLEET OWNER helps.

Fire Prevention Booklet

A NEW booklet, *"Preventing Welding and Cutting Fires"*, recently published, should be useful to all those interested in welding or cutting operations.

The booklet is an important part of the nation-wide program to promote safe practices among the users of industrial equipment. It includes safe and sure rules to follow for preventing the possibility of welding or cutting fires, as well as other pertinent information.

Copies of this useful booklet may be obtained free upon request. Write to the Linde Air Products Company, Technical Publicity Department, 205 E. 42nd St., New York, N. Y. . . . Mention of FLEET OWNER is always appreciated.

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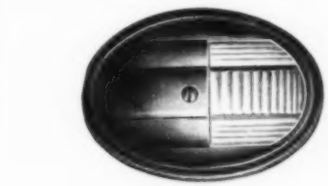
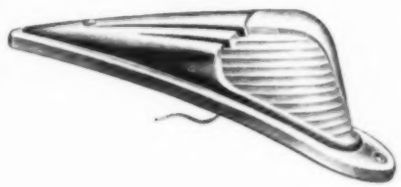
Two New K-D Lamps

TWO NEW truck signal lights are offered by K-D Lamp Company, Cincinnati, Ohio. Model 517 is a streamlined combination marker and clearance lamp, for curved surfaces; it is fitted with a thick rubber gasket to make the lamp fit snugly with the curvature of the body. Model 518 is





a turtle-back combination marker and clearance lamp.

Both models have been tested by Electric Testing Laboratories, according to the maker, and have passed or exceeded the requirements for visibility, dust-proofness, moisture-proofness and sturdiness of construction.

An important item to consider, the K-D Company points out, and one which has been authorized and recommended by various states and the I. C. C. for greater operating economy, is the fact that these two models save the current of four lamps. Their installation makes only four bulbs necessary, instead of the eight bulbs in the usual 8-lamp outfit.

These lamps are modernistically designed and have special glass lenses of either ruby or amber. The light beams can be seen at an angle of 90 degrees. Mounting can be done to make the light visible from front and side or rear and side. . . . For complete details, prices and discounts, address K-D Lamp Company, Cincinnati, Ohio. . . . If you mention FLEET OWNER when writing, we'll appreciate it greatly.

Industrial Tire Handbook

DESIGNED to point out ways to save money on intra-plant and industrial hauling, and telling how to lower costs and speed up plant operations by using the proper type rubber-tired wheels on material handling equipment, a new 30-page *Industrial Tire Handbook* has recently been published by The B. F. Goodrich Company, Akron, Ohio.

One of the most interesting parts of the booklet describes a simple test which can be made by any user or prospective user to show how rubber-tired equipment can reduce abrasive wear on floors, as compared to steel wheels. Another section describes a series of exhaustive tests by Goodrich engineers on the same subject, together with charts showing why rubber tires require less power.

A complete line of new steel casters equipped with "Vulc-On" rubber-tired wheels, with which old style casters can be easily replaced are listed on three pages, while steel wheels equipped with Vulc-On tires are described in five pages, with complete data and specification tables.

Six pages are devoted to wheelbarrow tires, including the standard type, with inner tubes, single tube, and solid type. . . . For your free copy address B. F. Goodrich Company, Akron, Ohio. . . . . We always appreciate it when you mention FLEET OWNER.

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Valve and Tube Vulcanizer

A. SCHRADER'S SON has added to its line of tire valve products a Valve and Tube Vulcanizer Set, which will take care of the entire range of rubber-covered valve replacement applications in one unit.

The set consists of one vulcanizer, and ten Schrader rubber-covered replacement valves, with a heat-unit for each valve.

The use of the vulcanizer requires no special wiring or electrical attachments. Operation is quick, simple and controlled. It will apply rubber-covered valves or repair any size tube from a bicycle size to the largest truck and bus tube made.

For further information and prices concerning this vulcanizer set (No. 8900) write to A. Schrader's Son, Division of Scovill Manufacturing Company, Inc., 470 Vanderbilt Avenue, Brooklyn, New York. Mention of FLEET OWNER is always appreciated.

Diamond-T Super-DeLuxe

(*Continued from page* 49)

and also on the Cab-Over-Engine line.

"Apart from the Diamond-T engine," Mr. Tilt adds, "many other very important betterments have been embodied in the Diamond-T Truck chassis. To mention a few—the compression-type, live rubber spring-shackle bushings, which never need lubrication; the rubber-mounted propeller shaft bearing carrier—a satisfactory solution to the anchorage problem of this vital part of the power line; the 'progressive' rear spring; the shock-protected pedal-mounting, and short-proof armored cable wiring.

"A new type of triple heat-treatment has increased both strength and hardness of rear axle driving pinions; heavier front axles and front springs of greater capacity are provided for some models; hand brakes also have been increased in size and power; and improved alloy-steel of greater strength has been adopted for certain transmission gears.

"A change in the hydraulic master braking cylinder increases braking power with less pedal pressure; radiators have thicker cores in some cases; larger drive shafts are used on five models. Safety glass is now standard on all Diamond-T cabs, and additional insulation has been added for increased comfort and quiet."

The standard Diamond-T line for 1938 covers the range from the ¾-ton Model 80 to the 5-ton Model 512DR (gross rating 24,000 lbs.). The Super-DeLuxe models and Cab-Over-Engine line are built in 1½-ton sizes and larger.

Contrary to the general trend of prices at this time, no increase has been announced for 1938, although the new Super-DeLuxe line is necessarily higher in cost than corresponding standard models.

Interesting literature, thoroughly illustrating and describing the entire Diamond-T line of trucks is now ready. . . . For your free copy address Diamond-T Motor Car Company, Chicago, Ill. . . . Mention of FLEET OWNER is always appreciated.

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Divco Door-to-Door Unit

(*Continued from page* 45)

it is equipped with expansion chambers to prevent overflow of acid. Bumper is heavier and more rigidly mounted, with rear bumper extending around corner of body to protect rear corner-post. Front springs are shackled at the front for greater stability in steering.

For the benefit of those fleet operators who are not familiar with the Divco-Twin house-to-house vehicle, it might be added that this vehicle is a 1-ton rated capacity job, built on a 100¾-inch wheelbase chassis having conventional engine location, driveshaft, axles and springing. Powerplant is a four-cylinder, L-head job, offered in bores of 3-3/16 or 3-7/16 inches, with a common stroke of 4⅜ inches. Piston displacement is 140 and 162.4 cu. in., respectively.

A handsomely illustrated catalog describing in detail this new Divco-Twin model will be gladly supplied to interested parties on request by the Divco-Twin Truck Co., Detroit, Mich. . . . When writing for your free copy, mention of FLEET OWNER is always appreciated.

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Plymouth Commercials

(*Continued from page* 53)

Seats in all models are upholstered in heavy, leather-finished fabric, which is said to be long wearing and easy to keep clean.

In the Commercial Pick-up, Plymouth's system of weight distribution permits the use of a steel express box fully 6 feet long, with floor width of 47½ inches. Its low floor makes it easy to load and unload from sidewalk or ground level. Edges of the deep flare-boards are rolled, to add strength. The steel tailgate can be lowered and can be secured flush with the floor, giving added capacity for carrying extra long or bulky objects.

The Chassis-with-Cab unit consists of the Plymouth Commercial Car chassis, including fenders, running boards and hood, and the built-in cab, exactly the same as that used on the Pick-up model.

For interesting literature, further details and prices of the new Plymouth Commercials, address Plymouth Division, The Chrysler Corporation, Detroit, Mich. . . . Mention of this announcement in FLEET OWNER will be appreciated. Oftentimes it speeds up the service by identifying the source of the inquiry.

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Hudson Commercials

(*Continued from page* 55)

45 inches, and is 41 inches high. One of the important safety features pointed out by the maker is the visibility from the driver's seat.

The Cab Pick-Up is available on both 117-inch and 124-inch wheelbase chassis. The transmission has been made heavier and stronger, to withstand extreme road conditions. This car is mounted on 16" x 6" four-ply tires, but is also available with oversized truck air-wheels of either 16" x 6.5" or 16" x 7" size. It is distinguished by a long and wide body. There are steel lockers extending from the front to the rear on both sides, bolted solidly into place. These can be used also as seats for workmen and for carrying tools. With the locker boxes removed, the Pick-Up has 47½ cubic feet of carrying capacity. The tail-gate lets down flat to facilitate loading. It has what is claimed to be an unusually low loading height.

The Hudson Terraplane Taxicab this year incorporates many improvements. It is mounted on either 117 or 124-inch wheelbase chassis, and in the larger size it gives an extra seven inches of length in the passenger compartment without reducing the room in the driver's compartments.

The Hudson Terraplane Station Wagon for 1938 is mounted on the 117-inch wheelbase chassis and has many new features this season. The side-curtains are kept flat in carriers which fit in a specially-designed space back of the driver's seat. With all seats in position, the Station Wagon has a capacity of eight passengers. When the center and rear seats are removed, there is a load space that is 83½ inches long by 56 inches wide. Additional baggage can be carried by lowering the extra large end-gate. For added efficiency, the center and rear seats are now interchangeable. This type of car has grown in popularity annually because of its all-around utility as a bus, mail car, camp car, or delivery wagon and handy car about a farm or estate. Safety plate glass and windows are available.

The Hudson Motor Car Company also supplies a Chassis-and-Cab unit on 124 or 117-inch wheelbase, permitting special body mounting. On this chassis are many improvements for 1938. Heavier gauge material is used for the side-rails and X-members of the frame and the rear cross-member is gusseted to the side-rails. Improved carburetion is employed, giving still greater economy, it is claimed. There is a new silent "straight-through" muffler, a heavier transmission shaft and stronger gears. The steering gear also has been made heavier and there are numerous refinements in the engine and running gear. Throughout the entire line these business cars have been designed for maximum utility and heavy-duty service, the makers state. In appearance also, these new cars seem smart and attractive in their styling.

Literature that illustrates the complete line of Hudson Business Cars for 1938 is now available. For your free copy address Hudson Motor Car Company, Business Car Division, Detroit, Mich. . . . Mention of FLEET OWNER is always appreciated.

New Range for Hall Hones

THIS is the new Hall Model H cylinder hone which has recently been re-designed to provide a range of 2.6 to 4.625 inches, without extensions.

This range increase permits servicing the Model 60 Ford with the same hone as used for larger cylinders. and makes it unnecessary to invest in a small hone for this model.

Other features of this hone are: micrometer adjustment; fast-cutting ability, wet or dry; extreme accuracy. . . . For further details address Hall Manufacturing Co., 1620 Woodland Ave., Toledo, Ohio. . . . We always appreciate it when you mention FLEET OWNER.

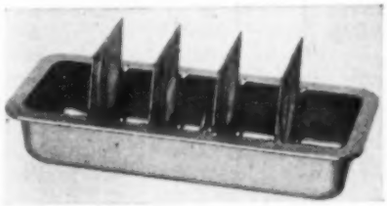
•

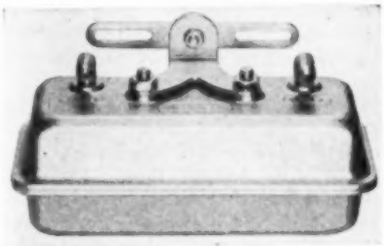
"Permanent Oilfilt'eer"

THIS oil filter is declared by its makers to never need any replacement elements. It can be easily opened and cleaned of all dirt, grit, abrasive materials, etc., that may be in the oil.

In operation, oil entering the filter is trapped of all impurities in catch-basins; it is first cleaned through a No. 40 brass wire mesh; then it enters a catch-basin which has a passage of No. 50 brass wire mesh; then into another catch-basin having a passage of No. 60 brass wire mesh. Lastly, it enters another catch-basin through a passage of No. 80 brass wire mesh.

The filter is so designed that each catch-basin accumulates and holds its own amount of impurities, thereby giving diversified filtration, and once caught, these impurities will not be re-distributed in the oil, it is claimed.





On returning to the engine, the pressure causes the oil to be delivered from the *top* of the last catch-basin, without disturbing the settled impurities at the bottom of it.

The makers state that on a new motor it will not be necessary to clean the filter until after about 20,000 miles. On an old used motor, 10,000 miles is given as the first cleaning interval; after that, each 20,000 miles. Cleaning can be done without removing the filter from the motor.

This filter is made of die-cast aluminum with baked enamel finish. It weighs 1¾ pounds. Dimensions are 8 x 3¼ x 3½ inches. . . . For further details, prices, discounts, etc., address Permanent Oilfilt'eer Company, 4155 W. Cullerton St., Chicago, Ill.

•

"Sleet-King" Defroster

THIS new defrosting device requires no replacement of the regular rain wiper blade. It slides over the top of any wiper blade in a second's time and is instantly ready for use.

Sleet-King utilizes the natural action of the rain wiper blade to distribute its defrosting solution over the entire area of vision. It can be readily slid off the wiper when no sleet is present.

Sleet-King comes with 2 extra refills. There's nothing to take apart or adjust; the refills snap into position in live rubber grooves, housed in a stainless steel clip.

For further details address The Sleetex Company, Inc., 404 Fourth Ave., New York, N. Y. . . . Mention of FLEET OWNER is always appreciated.

•

New Monarch Governors

A COMPLETE new line of governors is announced by Monarch Governor Company, Detroit, Mich., known as Model "S".

These governors are entirely new, the maker states, combining many features of the Monarch vacuum principle, and possessing a wide adjustment range. Adjustment is accomplished by turning a screw, permitting a range of from 25 to 60 m.p.h.

The Monarch "S" type governor employs a piston operating in a bronze cylinder. Throttle-valve and piston-rod are mounted on ball bearings. An efficient air-filter is used.

Prices are lower than those of the previous "R" series, this being possible by simplifying the design and mounting the entire unit in a die-cast housing. According to James Anderson, Jr., general manager, the

new "S" series governors are positive, quick-acting and in constant balance to compensate for variations in load and driving conditions, eliminating tendencies to hunt, surge or overrun.

For interesting literature address Monarch Governor Company, Detroit, Mich. . . Mention of FLEET OWNER is always appreciated.

•

New "Exhaustalyser"

THIS exhaust gas analyser was particularly developed for portable work where it is desirable to run road tests. It is completely new in design and construction and is entirely self-contained except for the fact that it, naturally, has to have a tail-pipe connection and a rubber hose.

It is sufficiently small that it may be mounted on the door-window of a vehicle by means of hooks which are furnished; it may also be mounted on the guy-rod under the hood; or, it may be laid on the seat alongside the driver.

Calibration has been made in line with the latest information on exhaust gas analysis practice. A changeable cell-block is featured, so that the user can change the cells in the field, without having to send it back to the

factory. Readings may be made in percent combustion efficiency, air-fuel-ratio, or rich-normal-lean.

For further details, prices, etc., address Charles Engelhard, Inc., Chestnut St. & N. J. R. R. Ave., Newark, N. J. . . It's always appreciated when you mention FLEET OWNER.

lowed to run with one headlight."

"Treads on tires contribute greatly with regard to stopping ability."

"Officials will not tolerate smooth tires. Most casings will give 25% trouble-free mileage after original tread has been worn off—but not safe miles."

"Regrooving for safety is one of the important factors, as our trucks operate on city streets. Not being on the highways, they are not subject to the strain of high-speed operation. Also an economy feature."

"In the short time that we have been using a regroover, we have found that it lengthens the life of the tire and also promotes safer driving and gives less skidding."

"Increases our braking ability; cuts down the use of chains to a certain extent; decreases skidding."

"Tire regrooving, in my estimation, not only gives quicker and safer stops, but due to less road friction after regrooving, we believe we get more mileage."

"A sharp corner is always better than a smooth tire."

"Regrooving is desirable; we base our opinion on that of the tire manufacturers; you wouldn't buy a tire without some sort of a tread design, would you?"

"Regrooving lengthens tire mileage and also is a safety measure. With a tread, it ventilates the tire on the ground, while the smooth tread just creates a vacuum."

"We are in favor of regrooving tires in fall and winter, because of falling leaves, ice and snow. If tires have less than ¼ inch of tread left we do not regroove, but wear them out in summer."

"We operate a safety campaign and some of our drivers will not drive a truck with smooth tires."

"In our opinion, between a smooth tire condition and the first breaker strip, safer operation can be obtained by regrooving. We do not believe that the rate of tire wear is appreciably affected by regrooving."

"Smooth tires are unsafe. By regrooving they give better traction, cutting down slipping and possible skidding."

"Regrooving gives better traction; lessens chain expense in most any going except ice and sleet; believe it adds to tire life by allowing flow of rubber in tread. It definitely aids in controlling uneven wear on some inner duals. Our drivers are strongly in favor of it."

"By regrooving you can operate the tire for a few thousand more safe miles; if you didn't regroove, you'd have to discard the tire in the interests of safety; it also improves the appearance of the tire."

"Think that a regrooved tire runs cooler than a smooth one; therefore prolongs the life of the casing; also increases the non-skid qualities and, in some cases of tread design, lessens premature wear due to suction."

"Believe that regrooving will neither shorten nor lengthen the life of a tire; it is merely a safety factor."

"Very much in favor of regrooving, mostly as a definite safety measure; it is also an economy measure, as we have experienced anywhere from 3,000 to 5,000 additional miles on a regrooved tire; drivers insist on tires with treads."

"Regrooving gives better traction; prevents sudden stops and locked wheels; burned tires, etc."

"Where a tire has sufficient rubber, as all good tires do, think regrooving is o. k. in every respect."

"We don't make a practice of regrooving, however I think that it cuts accident hazards about 80 per cent."

REMARKS—(*Not* in favor of tire regrooving)

"Have not found regrooved tires entirely satisfactory."

"Do not consider regrooving passenger-car tires (especially 4-ply) as worth-while, as tread stock is not thick enough to take a deep enough cut."

"We thought at first that it was going to be a good thing. After experience, we do not like it; think it is dangerous."

"We do not favor smooth tires; do not regroove tires, however, as we recap them before they are smooth."

"I am not against regrooving, but have found in some cases after regrooving that the rubber peels off and wears down rapidly."

"Regrooving has not been entirely satisfactory; shortens tire life and shows very little, if any, additional traction. No comparison to new moulded tread."

"Have not made exhaustive tests, but on 15 cabs, regrooving was not successful. It does prolong the life of the tire but not to the equal of the cost of regrooving."

"Believe it would be better to recap or retread a tire."

"Do not believe the results claimed justify the work—and that regrooving weakens a tire."

"Regrooving shortens the life of the tire. The practice is not safe, as manufacturers design treads for longest wear and larger safety factor."

"Do not believe regrooving warrants its cost; prefer to retread when tire becomes unsafe. Have some tires that have been retreaded five times."

"Regrooving never gave more mileage; cost did not justify doing it."

"The same investment used towards the purchase of new tires would give safer and more economical returns on small-size tires."

"Do not believe increased safety mileage warrants cost. Remaining mileage left in tire, when down to regrooving stage, can be run on front wheels, where traction is not so essential. Possibility of too deep grooving for safety."

"Have felt that grooving a tire might weaken it. Are experimenting with retreading and recapping. Grooves, to be good, must be deeper than a smooth tire will stand."

"Regrooving weakens the tire and causes blow-outs and splitting. Tires are not made to be regrooved, in my opinion."

"Regrooving is neither safe nor economical; it improves appearance of tire for resale."

"In our experience, tires are too weak to stand regrooving, after wearing off original tread."

"When worn smooth we believe that a tire is all finished and that regrooving will not help it any."

"We did regroove but have discontinued this practice because of many failures, caused by cutting the rubber too close to cord. The rubber would then check and allow water to get in and rot the carcass."

"When a casing is smooth, it is time to retread; grooving is time wasted, as rubber is not thick enough."

"Regrooving shortens life of tire; easier to puncture; blow-outs more apt to happen, etc., especially in starting and stopping work."

"Grooves cannot be cut deep enough to prevent skids; does not help to stop vehicle any sooner; will not prevent side-skidding."

"In our operation we get more stone-bruises, glass-cuts and nails in a tire that has been regrooved, because the material is so thin at that point."

"Our experience showed that regrooving hastened tread wear until the tires were smooth again. By driving the tires smooth during the summer months, our mileage increased considerably. We replace all smooth tires with new ones when winter, begins."

"On our dump-trucks we usually put a set of new tires on and leave them there until worn through to the fabric. There may be some safety in regrooving, but we can't see much economy."

"Our regrooving experience resulted

in casings splitting open on top, due to apparent increased pressure caused by weakening of carcass."

"When our tires become nearly smooth we retread. By the time the tires are smooth, the regrooving tool cuts nearly to the cords, when it is likely to damage it and make the tire unfit for retreading."

"We do not believe in cutting away good rubber in order to get a little better non-skid tread. It is far better to replace worn tires with new ones, or with retreads, when roads are slippery—and wear the smooth tires out during dry periods of the year."

"Not against regrooving, but believe re-capping is more economical; it gives us many more miles for about 1/3 the cost of a new tire."

"Have tried regrooving and feel that it shortened the life of the tire and gave very little added safety. We now retread casings and find that this really pays."

"Regrooving, to be efficient, would be too deep for the casing of the tire, and so would make the tire just as unsafe as if it were smooth."

"We feel that a tire that has run far enough to need regrooving is unsafe, because the strength of the casing is weakened; especially so on long-haul jobs."

"The non-skid action of a tire depends largely on the amount of rubber on same; when a tire has lost its rubber, regrooving will not pay, so far as safety is concerned."

"Regrooving often cuts into breaker-strip, admitting dirt and moisture; does not increase traction or non-skid qualities."

"Against regrooving of 4-ply tires, because by the time the tread is worn smooth or almost smooth, there is not enough rubber left to take even a shallow groove without increasing greatly the danger of a blow-out."

"Consider regrooving useful only on tires with extra heavy treads."

"Do not consider regrooving practical or necessary, if tires are properly matched and changed around."

And that, folks, is the story on Tire Regrooving. We are giving you the results for whatever they may be worth. Don't take *our* conclusions (as advanced early in this article) for granted, but formulate your own.

We will repeat that these questionnaires are conducted solely for the fleet man' benefit. The information in them is "confidential business" and only those who participate in them are really entitled to the "confidential" summaries which follow them. In these summaries you get *all the* "meat"—trade-names, brands preferred, and everything. So why not start out today and become a regular "member" of our Question-of-the-Month Club?

As stated previously, we have made a typewritten tabulation of this survey, for easy reference. Copies have already been furnished to those operators who participated in it. We have a few more on hand, which we will be glad to furnish, gratis, to any interested fleet operators who will participate in this month's questionnaire. We will then consider it an even exchange.

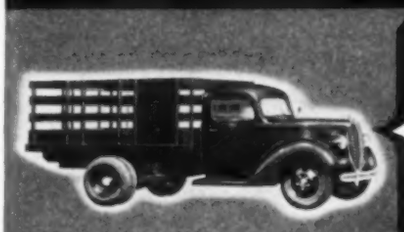
These surveys are conducted primarily for the fleet operator's benefit, and if *more* operators would participate, it would please us greatly. All you have to do is turn to page 57, fill out the blank, and mail it in to the Editor. If you cannot answer all of the questions, just answer those you can, and leave the rest blank.

In return for your efforts, we will send you a tabulated, typewritten resumé of all the answers. Many operators have told us that they save these tabulations, filing them directly under the subject discussed, where they will be handy for future reference.

This month's questionnaire, on page 57 of this issue, covers Engine Lubrication. We would sincerely appreciate your participation. No names are ever mentioned in these surveys, so you need not hesitate, as we keep all fleet names *strictly* confidential. The

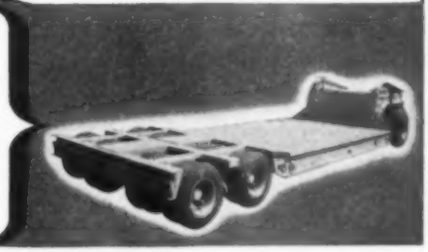
Midland Stops Them All!

A complete range of sizes available in both Air and Vacuum Power Brakes for every size and type of vehicle « « «



FROM THIS 1½ Ton DELIVERY

TO THIS 70 Ton TRAILER



No matter what size equipment is in your fleet, there is a type of Midland power brake to serve you better. Proof that this is true is shown by the adoption of Midland power brake equipment by the nation's largest fleet owners—by its selection as *standard factory equipment,* by 32 manufacturers of trucks, tractors, and trailers. See your nearest Midland distributor today—or write us for complete information and prices. THE MIDLAND STEEL PRODUCTS CO., 10609 Madison Ave., Cleveland, Ohio.

BE SURE YOU GET ALL THESE FEATURES

1. Quickly and easily installed—simple instructions included
2. Simple in design—rugged in construction
3. Fully complies with all city and state laws
4. Nation-wide Midland service organization
5. Factory rebuilt exchange plan

MIDLAND POWER BRAKE EQUIPMENT

MIDLAND (CHRISTENSEN) Power Brakes

4 × 2 = 8

Transmission Speeds — *Axle Ratios* — *Forward Speeds*

To obtain the many advantages of dual performance buy your trucks equipped with the Eaton 2-Speed Axle.

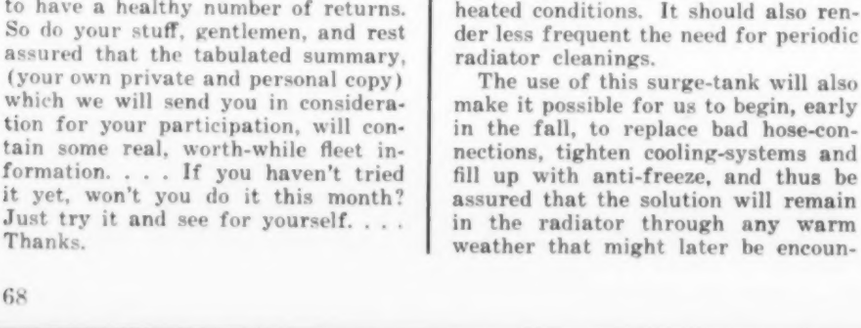
The HIGH Ratio

—gives you Overdrive Performance, enabling the truck to maintain any given road speed at greatly reduced engine R. P. M. Truck travels faster and farther than normally on a specified number of engine revolutions. Savings are made in gas, oil, and engine wear. Loads move at more profitable speeds. More and faster trips are made over smooth highways. Time and money are saved on every trip. Earnings are substantially increased.

The LOW Ratio

—gives you Underdrive Performance which provides extra pulling ability. Better time is made over many grades. Normal speeds are maintained without shifting to lower transmission gears. Time is saved in hilly country, over rough roads and through heavy traffic. Starts the heaviest loads more smoothly. Pulls out of mud, sand, loose gravel, and deep pits without "bucking" or "frogging."

EATON MANUFACTURING CO.
CLEVELAND, OHIO



Regrooving Experiences

(*Continued from page* 67)

only way that we can assure you that these surveys are "representative" is to have a healthy number of returns. So do your stuff, gentlemen, and rest assured that the tabulated summary, (your own private and personal copy) which we will send you in consideration for your participation, will contain some real, worth-while fleet information. . . . If you haven't tried it yet, won't you do it this month? Just try it and see for yourself. . . . Thanks.

Radiator Condenser Tank

(*Continued from page* 24)

reduction in engine maintenance costs, especially in those costs due to overheated conditions. It should also render less frequent the need for periodic radiator cleanings.

The use of this surge-tank will also make it possible for us to begin, early in the fall, to replace bad hose-connections, tighten cooling-systems and fill up with anti-freeze, and thus be assured that the solution will remain in the radiator through any warm weather that might later be encountered, such as in late fall and early spring.

We shall also enjoy a saving in labor, by changing "radiator-filling" from a daily to a monthly operation. In fact, we do not know as yet just exactly how long it will be possible for us to run a vehicle so equipped, without adding anything to the radiator. We have installed this device on passenger-cars and trucks and have operated them over 2,500 miles (thus far) with no additions necessary to the radiator.

Summing up, here are the principal advantages which we expect to enjoy as a result of the adoption of this device:

1. The use of an alcohol-base anti-freeze in cooling systems operating above 160° F. jacket temperature.

2. Reduction in the amount of anti-freeze used throughout the winter.

3. Saving in labor, by changing radiator-filling from a daily to a monthly operation.

4. The assurance that when a rust-inhibitor and/or anti-freeze is used, it will not evaporate or surge out through the over-flow pipe.

(Editor's Note: Through the kindness of Mr. Lewis, and also of Capt. O. A. Axelson, Fleet Engineer for the Columbia Gas & Electric Company, with which the Dayton Power & Light Company is associated, we are pleased to offer the foregoing article for whatever it may be worth. . . . Captain Axelson reports that he estimates the Company will reduce its anti-freeze bills by about $600 this winter through the use of this device. . . . It has already been installed on about 130 cars and trucks of the Dayton fleet, and installations will continue to be made until everything in the fleet is equipped. . . . We inquired into the cost of making this device, and they tell us that it is made up in their own shops (and can easily be made up in *your* own shops) at a small cost, including all labor, material and installation.—H. C. F.)

•

Electric Welding

(*Continued from page* 30)

facturer. It was developed particularly for automotive repair work and can be used on any power line. It is handy, readily movable around the shop and small enough to be hauled to outside emergency jobs. (A line to the Editor will bring interesting literature.)

Savings available with welding equipment in fleet maintenance are large; sufficient in many cases to pay for the welding equipment in a few months' time. Having paid for itself, welding equipment continues to save fleet owners money, thus leaving a large share of earnings as "profit."

In conclusion, it is not the purpose of this article to picture electric-welding equipment as the "cure-all" for all fleet operating ills, although

if any *one* single piece of shop equipment could be considered a panacea for curing high operating and maintenance costs, then welding equipment must be one.

In order to appreciate the versatility of welding equipment (electric or gas) it is necessary only to visit a fleet garage which is so equipped. It will soon be realized that welding outfits are in use almost constantly, doing all sorts of repair, salvage and even construction work.

In fact, some of the very large fleet operators keep a welding mechanic on hand twenty-four hours a day (not the same man, of course)—so important are his services considered in keeping their rolling stock rolling—on the road, earning money.

The author of this article has visited many fleet garages and the answer to the question, "Do you have much use for your welding equipment?" is invariably the same—"We keep it handy every hour of the day (and sometimes night) and use it more than any other other piece of shop equipment."

It is also interesting to point out, that in the Prize Contest conducted by this publication a few years ago, in which the subject was *"What Piece of Shop Equipment Is Most Valuable?"*, welding equipment (both electric *and* gas) figured very highly among the answers. In fact, two of the prize-winners chose welding equipment as their most valuable item of shop equipment.

The reasons for this large choice of welding equipment, of course, are quite obvious. One reason is the great inherent versatility of the equipment in repair work, where it is effective in making damaged parts as good as new, regardless of the type of metal of which such parts are made. And this can include cast-iron, mild rolled steel, light-gauge steel, high-tensile steel, cast-steel, as well as non-ferrous metals such as bronze, brass, copper, aluminum, etc.

Another reason for such popularity of welding equipment is its ability to keep repair costs at the lowest possible level—and this applies particularly to fleet maintenance, where it permits the user to do the entire repair job right in his own garage, with his own equipment and with the services of his own conscientious workmen. He does not have to farm-out his welding jobs (when he has his own equipment) and therefore saves what would be added to the cost, in order that the outside shop ordinarily doing the work might realize a profit.

(Of course, you have heard the above "sermon" before. But we'll bet that you have never read such an interesting article on electric-welding as this one, anywhere. We base our bet on our complete knowledge of the run of so-called "fleet magazines" and are pleased to have the opportunity of again "pioneering" such an interesting, pertinent subject.—Ed.)

Tire Experiences

(*Continued from page* 34)

other truck operators. His experiences in using retreaded tires during the past thirteen years and particularly during the past four years, have convinced him of the fact that "retreaded tires and recapped tires will save materially on tire costs for any truck operator." He proves this statement by file cards showing mileage records as high as 120,000 miles, of tires that have been retreaded or recapped *as many as five times.*

This record is, of course, unusual but it shows the further fact that a tire is never discarded by the Boston Store organization until the carcass is hopelessly worn. Retreading two and three times on the same carcass is not at all unusual with this organization.

Mr. Lewis does not make a practice of trying to squeeze out the last mile of service from either a new or already retreaded tire before rebuilding it. He believes that more mileage is finally lost by such practices than is saved by the additional original mileage. Records show that retreads

Saves Hours Wasted

Loading and Delivering

YOUR trucks probably average 2 to 3 hours actual running time, and spend 5 to 6 hours loading and delivering. You know what it would mean to reverse these times . . . to keep your trucks rolling 5 and 6 hours daily, with stops to pick-up and deliver cut to 2 or 3 hours. Speed . . . plus Safety . . . ending costly Material Handling Accidents to Men and Merchandise . . . economies quickly paying for

LA-TRO LIFT-GATE

• LIFT-GATE is a powerful freight-elevator, lowering to the street, or sidewalk, smoothly, quietly, safely.

• A geared power take-off from the truck motor raises and lowers LIFT-GATE. While travelling, an end-gate to hold load in truck.

• LIFT-GATE makes material handling a 1-man job, with exact elevator control, safety and speed.

• Controlled through a large ratio worm-gear, giving a positive mechanical lock to hold LIFT-GATE at any desired level.

• LIFT-GATE is mechanically simple and foolproof • positive in action • no pipe lines, no fluids, no valves.

• LIFT-GATE is always ready, able, and willing, to unload or load the heaviest units.

• 70% of accidents result from over-strain to men in lifting, carrying, slipping, or being struck by falling objects.

• LIFT-GATE and positive mechanical handling saves many costly accidents to both Men and Merchandise.

• LIFT-GATE can be quickly installed on your present chasis, or built into the frame of your new truck or trailer.

• WRITE for the whole story • for full descriptive matter • ask for an actual demonstration.

• What it does for others • LIFT-GATE will do for you.

A USER WRITES "By the use of this one unit we have been able to eliminate six 5-ton Trucks. This unit is doing the work of the entire six."

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LA-TRO LIFT-GATE

● "We've performed a major operation; we've cut out the CAUSE of most speeding, which is: "trying to make up for lost time."

Speeding Gains Nothing

Where there's a *Servis Recorder* on the truck, that truck doesn't have "lost time." Or if it does, that lost time *shows up* on the chart and no amount of speeding will make it up!

That's something which even the Insurance Companies now recognize. Ask for Insurance Testimony and complete facts today.

Prevention* beats *Cure

Over 100,000 trucks now equipped with the *Servis Recorder.* These are the trucks that have the best records on accidents, year after year.

THE SERVICE RECORDER CO.
1422 Euclid Ave., Cleveland, O.
Branches in Principal Cities

The Servis Recorder
Tells Every Move Your Truck Makes

and recaps vary from 20,000 to 35,000 miles of service for this organization.

Such mileage variations are due to the individual abilities of drivers as well as the nature of the truck runs. The trucks which make the longer and higher speed runs to the more distant centers within the 50-mile delivery zone of the Boston Store, naturally subject tires to greater wear than do the trucks with shorter hauls.

Of the 1,049,000 miles covered by Boston Store trucks during 1936, the card system maintained showed that a definite relationship exists between the type of run made by a truck, the truck driver's ability and the life of the tires. The daily mileage average of the trucks varies from 25 miles to 175 miles.

Although both retreads and recaps are used, Mr. Lewis feels that recaps are superior to retreads, providing the tire carcass is in such condition as to warrant recapping. This, in his opinion, is due to the greater mold heat necessary in retreading. In recapping, the heat is confined largely to the tread surface area and does not bring the entire tire surface to such a high point of heat. This helps to prolong the life of the tire and preserve the inner structure for future recapping operations.

In speaking of tire life, it might be worth while to mention that Mr. Lewis has found that he gets longer service from 32x6, ten-ply tires than from 7.50x20, 8-ply tires. These are the two principal sizes used on the Boston Store trucks.

Mr. Lewis has found that *all* tires cannot be retreaded. In occasional instances a worn new tire is not in such shape as to warrant retreading. The Boston Store organization never buys retreaded carcasses. In every case they have *their own* worn tires retreaded or recapped. The only time that a retread carcass is furnished by the retreading organization is when a carcass is ruined in the mold. This, however, is very rare, we are told.

Some examples of the service obtained from rebuilt tires are contained in the following individual tire records. In one case a 32x6 tire gave 37,000 miles service new. Retreaded it has given 38,000 miles of service and is still running. Another, a 7.50x20, gave 20,656 miles as a new tire, 13,622 on the first retread, 10,711 on the second retread and 15,384 on the third retread. This tire is on a truck that has a daily run of 135 miles.

Another point of importance with The Boston Store organization is that Mr. Lewis does no retreading or recapping within his own organization. He not only doesn't do any now, but *he doesn't intend to in the future,* he says.

His reasons for this are definite. "We do none of our own retreading because we feel that retreading and recapping is a job for specialists in the business. Also, although we have a good many tire rebuilding jobs, we could not devote the full time of our men to it. Another important reason is that we feel that equipment costs would be such that it would require too long a period of time for them to pay for themselves."

●

Bottler Airs Paint Secrets

(*Continued from page* 38)

synthetic enamel, the painter working all around the vehicle and applying the second coat immediately after the first. This is portrayed in Figure 3. Then the tail-gate is sprayed with two coats of red synthetic enamel and the spraying operation is finished.

The truck we will let stand in the paint shop for the time being, and in another four or five hours it will be completely dry, even in wet weather. When we are sure that it is completely dry, the masking compound is removed from the lettering with water. All tape and masking paper are also removed at this time, and we find that our trade-marks show up very attractively—white on the red tail-gate—and red on the yellow doors.

This latter cleaning-up operation requires about thirty minutes.

Next the top of the roof is lettered with our trade-mark. This is done by hand, using a black "bulletin enamel." And the job is completely finished, so far as the painting is concerned.

The truck is next turned over to the route-salesman (driver) and his helper gives it a good application of paste-type wax before it is taken out on the route. This waxing operation is repeated, after several washings of the vehicle when it gets dirty in its normal use. The job, finished and ready for the road, is shown in Figure 4.

In order to illustrate this story of our painting procedure, we had our photographer take the five pictures which accompany this article. Three of them cover the actual operations, one the "finished product," and one shows the two men previously mentioned.

The careful reader will notice that the first picture, Figure 1, illustrates a White, while the others are of a Federal truck. The reason for this discrepancy was that the picture of the cleaning operation on the Federal did not turn out well. The next truck in line for refinishing was the White; so we took a shot of the cleaning operation on that one, and we trust that it will serve to illustrate the point we had in mind.

No article of this kind would be complete without some cost figures for you to ponder over and perhaps compare with your own. On the job which we have just described, and which is illustrated in the photographs accompanying this article, the labor cost us $30.10, and the material cost $7.70, making a total of $37.80 for the complete paint-job. The average time for a complete paint job of this kind (including cleaning, welding, sanding, painting, drying, etc.) averages three-and-a-half days.

Here is a break-down of the cost figures, showing how we arrived at the total. It might be pointed out that the cost of the materials given is based on actual "fleet operators' prices" for first-grade synthetic enamels, thinners, etc. The figures on this particular paint-job are typical of all our paint-jobs on vehicles of a similar size. Here they are:

LABOR:

Garage mechanic ...	6 hrs. @ 1.00	$ 6.00
Fleet painter	16 hrs. @ 1.37½	22.00
Helper	7 hrs. @ .30	2.10
TOTAL LABOR		$30.10

MATERIAL:

3 qts. yellow	$2.97
1 qt. chassis black	.27
½ qt. chassis red	.68
1 qt. aluminum paint	1.39
1 gallon thinner	1.00
1 roll masking tape	.89
Sandpaper, masking paste, etc.	.50
TOTAL MATERIAL	$7.70

The writer has tried very hard to comply with Editor Fischer's request for a detailed paint story, and has gone into the subject in what he believes is great detail. In order to be absolutely sure, we waited for our next paint job, checked the figures very carefully, and secured the assistance of Messrs. Shaw and Barrow, to whom we are quite grateful. We trust that the readers of this valuable publication will get as much good out of this article as we have gotten out of other articles appearing in FLEET OWNER from time to time.

Goodrich Offers "Diesel" Batteries

A COMPLETE line of specially constructed batteries for Diesel starting service is announced by The B. F. Goodrich Company, Akron, Ohio. In the line are four 6-volt types, two 8-volt types and ten 12-volt types. . . . Eight of the batteries are of conventional construction and eight are built with the Kathanode construction. . . . The conventional type use Port Orford Cedar separators. . . . For further details address B. F. Goodrich Company, Akron, Ohio. . . . Mention of FLEET OWNER is always appreciated.

The instant action of the graphoid surface in furnishing lubrication for friction parts might well be termed "greased lightning protection". This protection is vital during cold engine starts when, according to lubrication experts, 75% of all engine wear occurs.

With "dag" colloidal graphite in crankcase and top cylinder lubricants, the protective graphoid surface is formed on all friction parts. This durable, lubricating film "stays put" and safeguards against wear until the oil is warmed sufficiently to flow freely. Thus, all moving parts have an additional lubricant present which "takes the strain" until full film lubricating conditions are again established.

There are many excellent crankcase and upper cylinder lubricants available which contain "dag" colloidal graphite.

Ask your oil supplier today about his colloidal graphited brands. Write us for Booklet 500 which gives in non-technical language full information concerning "dag" colloidal graphite.

ACHESON COLLOIDS CORPORATION
PORT HURON, MICHIGAN

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REG. U.S. PAT. OFF.

dag

COLLOIDAL GRAPHITE

ACHESON COLLOIDS CORP., PORT HURON, MICH.
Please send gratis, story on "dag" Colloidal Graphite and copy of "cigarette paper" test.

NAME .....

ADDRESS .....

EBERHARD
FITTINGS
Enhance
The NEW
White MERCHANDOR
AMONG the outstanding features that have brought instant acceptance for the new White Merchandor is found the new Eberhard Drivers Seat Pedestal, No. 575716. Designed specifically for cab-over engine bodies, this remarkable appliance combines universal seat adjustment and complete swivel action for utmost convenience.
In addition, Merchandor's doors have Eberhard locks of special design to fasten the sliding doors in both open and closed positions.
For superior body fittings, standard or special, consult your Eberhard dealer or write to,
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO
EBERHARD
SEATING APPLIANCES
FOR FULL DETAILS SEE CATALOG No 11.
E

1938 Chevrolet Taxicab

(*Continued from page* 51)

utility and to give it the performance, appearance, and riding-qualities of the passenger car.

The taxicab frame is of box-girder construction to provide the strength and rigidity required for livery work without sacrificing lightness and simplicity of design.

Single-acting shock absorbers have been installed at the front and rear to give added riding comfort. Semi-elliptic springs are used both front and rear.

It is also pointed out that the new taxicab has been engineered throughout by Chevrolet engineers, so that cab owners may take full advantage of Chevrolet's parts and service departments in obtaining immediate service whenever it may be required. Standard Chevrolet parts are used throughout.

For interesting literature, address Chevrolet Motor Division, General Motors Sales Corporation, Detroit, Mich. . . . Mention of FLEET OWNER is always appreciated.

Welded Generator Trailer

(*Continued from page* 47)

other structural shapes usually found in the scrap-iron pile.

While on the subject of welding equipment, it might be worth while to remind you that unnecessarily long lengths of hose for welding and cutting apparatus should be avoided. When they must be used, care should be taken that the hose does not become kinked or tangled and that it is protected from damage. Always protect hose from being trampled on or run over. Do not leave it so that it can be tripped over because a connection may be pulled off or the cylinders and equipment may be pulled over.

The hose should also be protected from flying sparks, hot slag and hot objects and also from contact with oil or grease as these deteriorate the rubber and constitute a possible hazard with oxygen. Hose should be inspected periodically and kept in repair in accordance with the manufacturer's recommendations.

•

Bendix "Bulls-Eye" Lining

A NEW type zinc-grid-backed molded brake lining, applicable to all internal type brakes has been announced by G. L. Everback, sales supervisor of the brake and lining division of Bendix Products Corporation, South Bend, Ind. . . . The new product is called Eclipse Bulls Eye Brake Lining, is designed to supplement Eclipse Roll Molded Linings, and is offered in 25-foot rolls in sizes from 1½" wide x 5/32" thick, up to 5" wide x ¼" thick. . . . Write to Bendix Products Corp., South Bend, Ind., for further details, mentioning FLEET OWNER, if you please.

BUY "QUALITY" FOR SERVICE

DIETZ

MOTOR LITES AND SIGNALS

BUY "QUALITY" for Service and Economy. Dietz Lites and Signals display the modern styling that mates with the newest and best of trucks and buses. They have the structural ruggedness that can "take it" and are the logical equipment to stand the hard wear of daily use over a long period.

R. E. DIETZ COMPANY
NEW YORK
Pioneer Makers of Vehicle Lamps
Founded 1840

Bendix-Westinghouse Revamps Its Field Set-Up

REPLACING the large central and eastern districts, the Bendix-Westinghouse field organization is now divided in accordance with the locations of its various district offices. . . . Under this new plan, the district offices of Bendix-Westinghouse are as follows:

Reporting to the Sales Manager at Pittsburgh:
New York—I. F. Nelis, District Manager.
Boston—W. F. Mahan, Representative in Charge.
Atlanta—C. R. Mitchell, Representative in Charge.
Washington—H. D. Neighbours, Representative in Charge.
Philadelphia—E. G. Smith, Reporting to New York Office.
District Engineer, Headquarters at New York—A. R. Leukhardt.
Chicago—W. C. Canann, District Manager.
Denver and Minneapolis, Representative in Charge reporting to the Chicago Office.
Cincinnati—A. J. Bent, Representative in Charge.
Field Engineer, Located at Chicago—W. D. Foltz.
Detroit—A. V. Howe, District Manager.
Field Engineer—W. W. Lowe.
Cleveland—J. P. Weber, In Charge of Factory Accounts. A. E. Wolfe, In Charge of Retail Sales.
Canada—H. W. Jackson, Representative in Charge.

Territory assigned to the above offices will be within easy traveling distance and will be quite similar in many respects to the system and method of sales, service and engineering contact established, previous to the formation of the central and eastern districts, some few years ago.

C. A. Ohl has been appointed director of sales and engineering, and Fred L. Hall, formerly eastern district manager, has been appointed sales manager. . . . R. H. Casler has been appointed chief field engineer. . . . All three of these gentlemen will make their headquarters in the Bendix-Westinghouse general offices at Pittsburgh.

•

Goodrich Appoints Glantz

APPOINTMENT of N. A. Glantz to the newly-created post of field sales promotion manager of the tire division is announced by P. C. Handerson, director of advertising and publicity of The B. F. Goodrich Company.

Previous to his present appointment Mr. Glantz had been in charge of the creation of retail advertising. E. D. Nathan, assistant manager of tire and battery advertising will now assume these duties.

In his new position Mr. Glantz will represent the advertising and sales promotion departments in the application of all advertising and merchandising programs in the field.

•

U. S. Truck Company Gives Bonuses

THE U. S. Truck Company has recently had its "bonus night" at which drivers who have gone a year without accident were rewarded with checks for $50 each. . . . Sixty-six drivers received bonus checks which ranged from $40 to $70, the amounts being awarded on the $50-a-year basis. . . . Carl W. Behrens, president of the company, made the awards.

Gas Manufacturers Convene

THE COMPRESSED Gas Manufacturers Association will hold its Silver Jubilee Meeting at the Waldorf-Astoria Hotel in New York City this month. . . . This meeting marks the completion of 25 years of energetic and constructive service to the compressed gas industry.

•

Conrath Joins B-L Electric

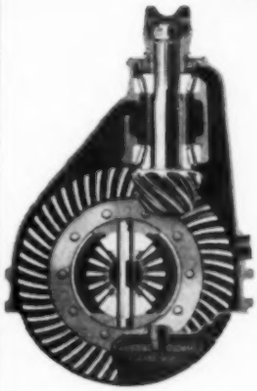
APPOINTMENT of Louis R. Conrath as sales engineer with The B-L Electric Manufacturing Co., St. Louis, Mo., is announced. . . . Formerly engaged in laboratory work with this Company, he returns to St. Louis after an absence of several years, to resume connections with B-L.

•

Buda Appoints New Foreign Distributor

THE BUDA Company, Harvey, Ill., announces the appointment of Auto Diesels, Ltd., as distributor of Buda gasoline and Diesel engines for automotive and industrial use. . . . Auto Diesels, Ltd., 243 Great Portland St., London, England, will cover Great Britain, Wales, Scotland, Northern Ireland and the Irish Free State.

THEY HAVE THAT
Extra Capacity
SALISBURY AXLES
FOR PASSENGER CARS & LIGHT DUTY COMMERCIAL VEHICLES



● Salisbury Axles are engineered not only for thoroughly efficient performance in modern passenger cars; they also have the increased capacity necessary for service in delivery wagons, ambulances, hearses and all other light duty commercial vehicles.

Important advantages of Salisbury Axles include simple design, sturdy construction, low cost, easy installation, ready accessibility for service, long life. These axles are now used in Stewart, Reo and Garford delivery wagons.

New Salisbury Axle for passenger cars and all light duty commercial vehicles.

Spicer Manufacturing Corporation
Toledo • Ohio

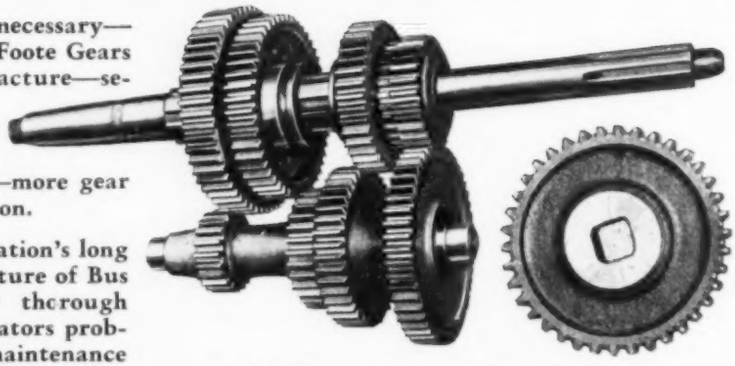
BROWN-LIPE CLUTCHES and TRANSMISSIONS
SALISBURY FRONT and REAR AXLES
SPICER UNIVERSAL JOINTS
PARISH FRAMES READING, PA.

Send for this FREE BUS and TRUCK Manual
Valuable Data

Brad Foote BUS TRUCK GEARS for REPLACEMENT

When replacements are necessary—specify the genuine Brad Foote Gears—their precision manufacture—selected steels—constant inspection—ease of replacement—special hardening process—give longer life—more gear miles—economical operation.

The Brad Foote organization's long experience in the manufacture of Bus and Truck Gears—their thorough understanding of the operators problems in reduction of maintenance costs and operating experience give these gears preferment.



The illustrated 88 page book showing parts of various models, including prices, etc., may be had by writing.

STOCKS IN PRINCIPAL CITIES
FOOTE GEAR WORKS INC.
1301 S. CICERO AVE., CICERO, ILL.

Points Out Advantages of Tractor-Trailer

PRACTICALLY an innovation in the field of motorized transportation only a few years ago, the use of tractor-trailer units today has become "big business." In the past five years the use of trailers in connection with tractors has increased 800 per cent. Approximately ten per cent of all trucks operating in major trucking centers are tractor-trailer combinations, and, in certain localities, this figure reaches as high as 25 per cent, according to Rufus Jones, Trailer Sales Manager for General Motors Truck & Coach Division.

The chief reason behind this sudden gain, says Mr. Jones, is because the tractor-trailer is an efficient answer to an age-old desire—to transport more volume with the same motive power. For the tractor-trailer is, actually, a modern motorized train that can haul goods anywhere roads exist. Nor does it depend on long hauls to yield a profit, for this type of equipment also can be operated profitably in short haul work, Mr. Jones points out.

Transportation men, who keep close tab on costs, have found that tractor-trailer operation is a money-saver in many ways. For example, common-carriers and bulk-freight haulers throughout the entire country have standardized almost 100 per cent on tractor-trailers because they can use light, economical tractors, haul larger bulk loads and still comply with the road laws. The result is lower depreciation, greater savings on gas and oil and reduced operating costs per ton-mile, Mr. Jones points out.

Contract haulers in railroad service also employ tractor-trailers almost universally, both for long hauls between connecting points and for short-haul work in what is commonly called "shuttle" operation. The latter type of operation involves transferring freight from one railroad to another or from railroad to warehouse.

With the modern type tractor and detachable semi-trailer, while one semi-trailer is being loaded or unloaded, the tractor can be traveling to the warehouse to pick up another semi-trailer, then transport it to where the first semi-trailer is waiting. In this way a tractor can keep two and sometimes three semi-trailers busy in contrast to a truck with attached body that must wait for loading or unloading.

Tractor-trailer operation on a "shuttle" system avoids waste time, keeps traffic flowing and accomplishes the transportation of maximum tonnage. The operation is therefore changed, in terms of miles covered by the tractor, from a short-haul proposition to a long-haul. Since operators are paid on a basis of ton-miles covered, it is obvious that this type of operation becomes a profitable one, if intelligently carried out.

Manufacturers and distributors of goods of all kinds use tractor-trailers to shorten the hours necessary to move goods from one city to another, or from railroad to warehouse. Department stores, which handle and sell much bulky merchandise such as furniture, carpets, stoves, etc., find the tractor-trailer a useful vehicle. Breweries make extensive use of this type of equipment for keg and case delivery to distributing points. And everyone is familiar with the huge white dairy trains which haul bulk milk from the farms to pasteurizing plants and in turn transport it to their distributing headquarters.

Adams Elected Director

JOE ADAMS, sales manager of the Toledo Steel Products Company, has been elected a director of the National Standard Parts Association for a three-year term.

He was chosen at the annual meeting of the NSPA held recently at the Sherman Hotel, Chicago, in conjunction with the Automotive Service Industries show.

Mr. Adams has been with Toledo Steel Products since 1927. His thorough knowledge of the merchandising of replacement parts, resulting from constant contact with jobbers throughout the United States over a 10-year period, qualifies him to take an active part in the program of the NSPA.

•

Maichle Manages Lincoln Detroit Office

LINCOLN Electric Company announces the appointment of F. M. Maichle as manager of its Detroit arc-welding sales-engineering office. . . . Previously, Mr. Maichle was manager of the Company's Pittsburgh office. . . . At the Detroit office, 10228 Woodward Ave., Mr. Maichle will be assisted by C. H. Buckmaster, J. F. Cunningham, N. B. Gilliland, T. A. Steel and F. E. Boucher. . . . A complete welding supply and consultation service will be provided.

•

Harvey Heads Houghton Production

DAVID M. HARVEY has been appointed superintendent of the oil department at the Philadelphia plant of E. F. Houghton & Company, makers of metal cleaners, processing oils, heat-treating salts, lubricants and leathers. . . . Production of sulfonated oils, quenching oils, extreme pressure lubricants, and oils for metal working, textile, cordage, and fibre industries will be under Mr. Harvey's direction.

•

"Light and Signal Group" Formed

FORMATION and official organization of a group known as the "MEMA Light and Signal Group" was effected during the recent ASI Show and Convention at Chicago. . . . The general aim of this group is the promotion of safety on the highways; it will be representative of all types of automotive lighting equipment. . . . Headquarters are at 250 W. 57th St., New York, N. Y. and R. S. Armstrong is manager.

•

Campbell Elected Reo Chairman

ANNOUNCEMENT is made of the election of Rowland Campbell as chairman of the board, Reo Motor Car Company, Lansing, Mich. . . . Donald E. Bates, president of the corporation, in speaking of Mr. Campbell's election said, "Mr. Campbell brings a wealth of business experience to Reo and will take an immediate active part in the conduct of the business."

•

Truck-Bus Gear Manual

AN interesting gear manual which provides gear information for all makes and models of trucks and buses is offered free to fleet operators.

This manual is especially devoted to transmission gears, covering all gears and shafts to fit all standard transmissions. Another section is devoted to worm gears—worm-wheels and worm-shafts. There is also a section on oil-pump shafts and gears and miscellaneous differential parts.

A master index lists all trucks and buses by makes and models and refers to the transmissions and other units used therein, thus providing an interchangeability table, a complete description of the part and the list price.

For your free copy of this interesting gear manual address foote Gear Works, Inc., 1301 S. Cicero Ave., Cicero, Ill. . . . Mention of FLEET OWNER is always appreciated.

Every truck or trailer that burns — every dollar's worth of cargo damaged by fire — costs you money, because it keeps insurance rates higher than they should be.

• The only way you can deserve a better insurance rate is to take extra precautions to reduce your risk. The Durakool Tipover Switch *does* reduce fire risk because it cuts off ignition at the instant of overturn. Most on-the-road fires result from overturn, and most of these are due to ignition—a spark from a falling or broken wire setting off the gasoline which spills when float valves are turned sideways or gasoline lines are broken.

A few dollars spent for a Durakool Tipover Switch, and a few minutes spent in simple installation, may save you thousands of dollars fire loss. Even if you are insured, it's better not to have a fire.

Durakool Tipover Switches are approved by Underwriters' Laboratories and are sold through automotive jobbers. If your dealer can't supply you, please write to the factory, giving his name.

Two mercury switches—of metal, not glass—are placed in series in the ignition circuit.

When vehicle tips 45°, mercury flows down into topmost switch, breaking ignition circuit, ending any chance of spark.

TIPOVER SWITCH
DIVISION
DURAKOOL, INC.
1084 North Main Street, Elkhart, Indiana

WESCO
Chains *a complete line . . .*

Wesco chains are rugged and dependable . . . a long-wearing line of case-hardened, heat treated chains for cars, trucks and buses . . . on and off in a jiffy with the patented Wesco lock. Here is a line that will pay any fleet owner dividends and give complete satisfaction.

Write for circulars TODAY

WESTERN CHAIN PRODUCTS COMPANY
1815 Belmont Ave., Chicago

CONSIDER THE ADVERTISING VALUE OF

GERSTENSLAGER BUILT BODIES

with their superior construction, modern design, better appearance, more strength with less weight, and longer life. Their cost is low. 77 years of building just good bodies—nothing else! Address 102-150 E. Bowman St.

The GERSTENSLAGER Co.

AMERICA'S VAN BODY BUILDERS
EST. 1860 WOOSTER OHIO

SKIDPROOF

•• New or old tires can now be made safer with Kwick-Kut Tire Groovers.

Now you can easily make the finest non-skid treads on your new or smooth tires. Simply cut grooves 1/16" wide ACROSS the tire, spaced about 1½" apart with the Kwick-Kut Artisan (ribbon blade) tire groover. It gives you

- •• faster starting
- •• quicker stopping
- •• better traction

Kwick-Kut Artisan groovers cut grooves 1/16", 1/8", 3/16" and 1/4" wide for all tire grooving work. Largest models cut grooves up to 1/2" deep.

Hundreds of fleet owners have adopted this new safety measure. Skidproof one set of your tires and check their improved action, you're to be sold on Kwick-Kut grooving as a permanent safety measure.

Write now, for catalog and free trial offer.

Kwick-Kut Mfg. Co., Inc.
3821 Arsenal St., St. Louis, Mo.

SKIDPROOF Grooving Tools

Functions of the Personnel Director

CONTINUING emphasis on industrial relations problems and the development of sound personnel policies has prompted many companies to look more closely to the organization of their personnel departments. They are doing this with the realization that improper organization of the personnel function seriously handicaps the development and execution of an effectual personnel program.

In view of the widespread interest in this problem, the Policyholders Service Bureau of the Metropolitan Life Insurance Company has recently issued a report entitled, "*Functions of the Personnel Director*" which is based on information obtained from 80 companies representing a wide variety of industrial and commercial enterprises, including these fields: automotive, electrical, foundry, iron and steel, machine tool, meat packing, paper, petroleum, rubber, textile, banking, chain and department store, insurance, mail order and public utility.

The report indicates that the personnel function is two-fold. It consists, first, of giving service to the line organization in the maintenance of an efficient labor force and, second, of establishing good relations with employees.

Regardless of the existence of an organized personnel department, every company finds it essential to hire new employees, place them at work for which they are adapted, transfer them to other departments to meet production requirements, and surround them with helpful and safe working conditions.

Personnel Management thus has grown both logically and historically out of the employment function. More recently, however, greater emphasis has been placed on the development of a cooperative attitude of mind by establishing good industrial relations throughout the organization.

The report outlines the personnel policies and programs of leading companies, describes the place of the personnel director in industry and business today, and indicates how personnel departments are organized. Particularly in the larger companies, sound policies, programs and organization methods are important, the report states but points out further that the development of good industrial relations is basically a human problem.

In order to create a spirit of cooperation, it is believed that management should know and have a better understanding of the individuals employed, treat them as associates, place them in positions where they can utilize and develop their abilities, and take an interest in their individual aspirations and development. Because there are conditions in every company

that make for either good or bad industrial relations, the report concludes that these conditions should be studied and brought under managerial control.

Copies of *"Functions of the Personnel Director"* may be obtained from the Policyholders Service Bureau, Metropolitan Life Insurance Company, 1 Madison Avenue, New York, New York. . . . Mention of FLEET OWNER is always appreciated.

•

Lighted Highways Decrease Accidents

NIGHT accidents have been decreased 55 per cent over a year period along the "Path of Gold Lights", a coined phrase for sodium safety lighting on St. Paul Boulevard in Rochester, New York.

More than a hundred units, employing airplane-type reflectors and tubular sodium lamps mounted horizontally, provide golden-orange illumination along four miles of the heavy-traffic artery connecting Rochester and Lake Ontario. Developed to combat night-driving hazards, the lights are being maintained by the Rochester Gas and Electric Corporation for Monroe County.

Traffic accident records one year *before* permanent safety lighting show 12 night accidents (one was a fatal accident) and 8 day accidents. Statistics one year *after* safety lighting show but four night accidents (none fatal) and 6 day accidents. This represents a 67 per cent decrease in night accidents, and a 25 per cent decrease in day accidents. Assuming the factors which decreased day accidents 25 per cent, also had the same effect on night accidents, this leaves 55 per cent as the decrease due to proper lighting.

•

"Sound Decay" is New Engineering Term

THE automobile industry is continually coining new words and phrases or digging into antiquity for old ones to express new things which are being constantly developed through the automobile.

One of the newest has arisen as a part of the intensive research and development which has been given to the elimination of motor car noise. It is called "sound decay."

Engineers use the phrase "sound decay" to express a new rating in determining the effectiveness of sound insulating material. It is the fading-out of reverberations.

As used by automobile men, the "sound decay" rating of a steel body panel is the length of time the panel will reverberate when struck with a hammer, engineers of Packard Motor Car Company inform us.

HOOF GOVERNORS

Key and Seal Type

FLEET OWNERS and DRIVERS Prefer them!

• Low Maintenance
• Full Engine Power
• Tamper-Proof

Dash Control Type

HOOF PRODUCTS COMPANY
166 NO. FRANKLIN STREET, CHICAGO, ILL.

Safety LIGHTING by K

Where Safety Counts— You can count on

K-D LAMPS

As usual, K-D presents for 1938 the most complete, practical and dependable line of automotive safety lighting. It's "quality first" . . . and lamps that last . . . designed, engineered and produced for maximum efficiency.

K-D SHO-TURN Direction Signal

Write for new K-D Catalog just off the press.

The K-D Lamp Co.
CINCINNATI, O.

YOU are saving pennies and losing Dollars without this Chart

The place where big losses occur is frequently where the pennies are lost or overlooked. Little losses soon make big ones. Just think what the loss of only a couple of dollars a day on each of your trucks can mean in a year's time! Here's one way to save the pennies which make the dollars in the trucking business:

USE HERCULES RECORD-MASTER

This automatic recording device can be quickly and easily installed on each of your trucks with no electrical or other connections and locked to prevent tampering. It automatically records EVERY STOP AND MOVEMENT of the truck during its working hours. If there is an unusually long stop at any time during the day, the chart will show it and you can check up to find the cause. You can tell from the chart EXACTLY what your trucks were doing each day. The RECORD-MASTER finds each minute of idle time and RECORDS it. You can SEE facts, then deal with them.

WRITE FOR FOLDER

Let us tell you the many advantages offered you through the use of RECORD-MASTERS on your trucks. There are many features that will interest you. Just write us today, and a folder giving complete information and illustrations will be sent you at once.

HERCULES AUTOMOTIVE SALES CORP.
THORPE BUILDING -- MINNEAPOLIS, MINN.

Several choice territories available for reliable distributors

Takes "CLING" out of Dirt and Grease!

MAGNUSOL, for motor and chassis cleaning, rapidly penetrates and puts in an easily rinsable condition all dirt, grease and oil. Simply spray or brush a COLD solution of MAGNUSOL on the surfaces to be cleaned. Let soak—rinse off with a stream of water. NO fire hazard! NO objectionable odor! Surfaces are left factory-clean!

Write today for your copy of our "AUTOMOTIVE CLEANING HANDBOOK" which gives the MAGNUSOL story along with other automotive cleaning information

MAGNUS CHEMICAL COMPANY
36 South Avenue Garwood, New Jersey

MAGNUS CLEANERS

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Use of Anti-Knock Gasoline Increases

A STEADY rise in the percentage of leaded anti-knock gasoline used by American motor vehicles, with a corresponding drop in the consumption of unleaded regular and third grade fuels, is reported in a nation-wide survey of gasoline sales by the Ethyl Gasoline Corporation. A parallel trend in compression ratios of automobile engines is noted, indicating that motor car owners are turning more and more to anti-knock fuel as engine efficiencies increase.

Sales of Ethyl or premium gasoline with an anti-knock rating of seventy-six octane or higher climbed from 558,900,000 gallons in 1934, to 622,700,000 gallons in 1935; and to 783,300,000 gallons in 1936. Engine compression ratio averages for the same years were 5.72, 5.99, 6.19, respectively.

Leaded regular gasoline, rated at seventy octane, increased in gallonage from 10,139,600,000 to 12,580,500,000 while total consumption of unleaded fuel of both the regular and the third grade variety showed a percentage decline of four per cent in the same three-year period. Actual gallonage in all classifications increased, however, as total consumption for the country was registered at 16,683,100,000; 17,742,200,000; and 19,622,200,000 gallons for each of the three years.

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DANIEL CRAWFORD, Jr., *Manager*

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Automotive Facts and Figures

OFTEN we are asked for figures on the previous year's automotive production—cars and trucks. The following tabulation has been issued by the Automobile Manufacturers Association, through its vice-president and general manager, Alfred Reeves. It represents the automotive industry's achievements during the year ending December 1937. Keep it for future reference.

Production and Value

Car and truck factory sales, U. S. and Canada	4,975,000
Passenger cars	4,050,000
Motor trucks	925,000
Percentage increase over 1936	8%
Wholesale value of cars, U. S. and Canada	$2,270,000,000
Wholesale value of trucks, U. S. and Canada	$ 532,000,000
Wholesale value of cars and trucks combined	$2,802,000,000
Wholesale value of parts and accessories for replacement, and service equipment	$1,075,000,000
Wholesale value of rubber tires for replacement	$300,000,000
Motor vehicles, accessories, service equipment and replacements of parts and tires	$4,177,000,000

Registration

Motor vehicles registered in U. S.	29,650,000
Motor cars	25,400,000
Motor trucks	4,250,000
World registration of motor vehicles	42,400,000
Per cent of World's automobiles in U. S.	70%

Taxes

Total motor vehicle user taxes	$1,580,000,000
Gasoline taxes, federal, state and municipal	960,000,000
Percentage motor user taxes to all taxes from all sources, federal, state and local	15%

Employment

Employment, in auto, auto body & parts factories	517,000
Weekly payroll, wages	$15,500,000

Automobile's Relation to Other Business

Automotive industry is the largest purchaser of gasoline, rubber, steel, malleable iron, mohair, lubricating oil, plate glass, nickel and lead.	
Railroad carloads of automotive freight shipped	3,725,000
Rubber used in automobile industry	75%
Steel used by automobile industry	18%
Lumber, hardwood, used by automobile industry	6%
Copper used by automobile industry	17%
Lead used by automobile industry	36%
Zinc used by automobile industry	11%
Tin used by automobile industry	14%
Aluminum used by automobile industry	12%
Nickel used by automobile industry	28%
Gasoline consumption by motor industry	89%
Gasoline used by motor vehicles (gallons)	19,500,000,000
Gasoline consumption by motor vehicles, retail value including taxes	$3,780,000,000
Lubricants used by motor vehicles (gallons)	408,000,000
Lubricants, percent used by motor vehicles	40%

Motor Trucks and Buses

Motor trucks in use	4,250,000
Total special motor truck taxes	$410,000,000
Number of truck drivers	3,175,000
Communities served exclusively by trucks	48,500
Motor buses produced	18,000
Motor buses in use	127,000

Foreign Sales

Number of American motor vehicles sold outside United States (U. S. exports and output in Canadian plants owned by U. S. firms)	650,000
Per cent increase over 1936	28%
Value of motor vehicles, parts and tires exported from U. S. and Canada	$392,000,000

Motor Vehicle Retail Business

Total car and truck dealers	46,250
Total repair shops	98,529
Total retail outlets, duplications eliminated	102,342
Wholesalers	5,913
Retail gasoline outlets	380,000

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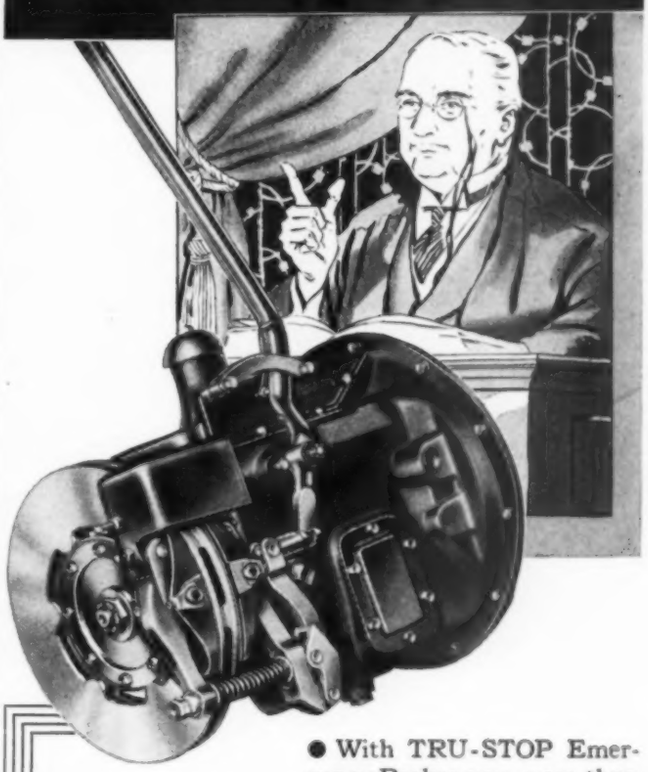

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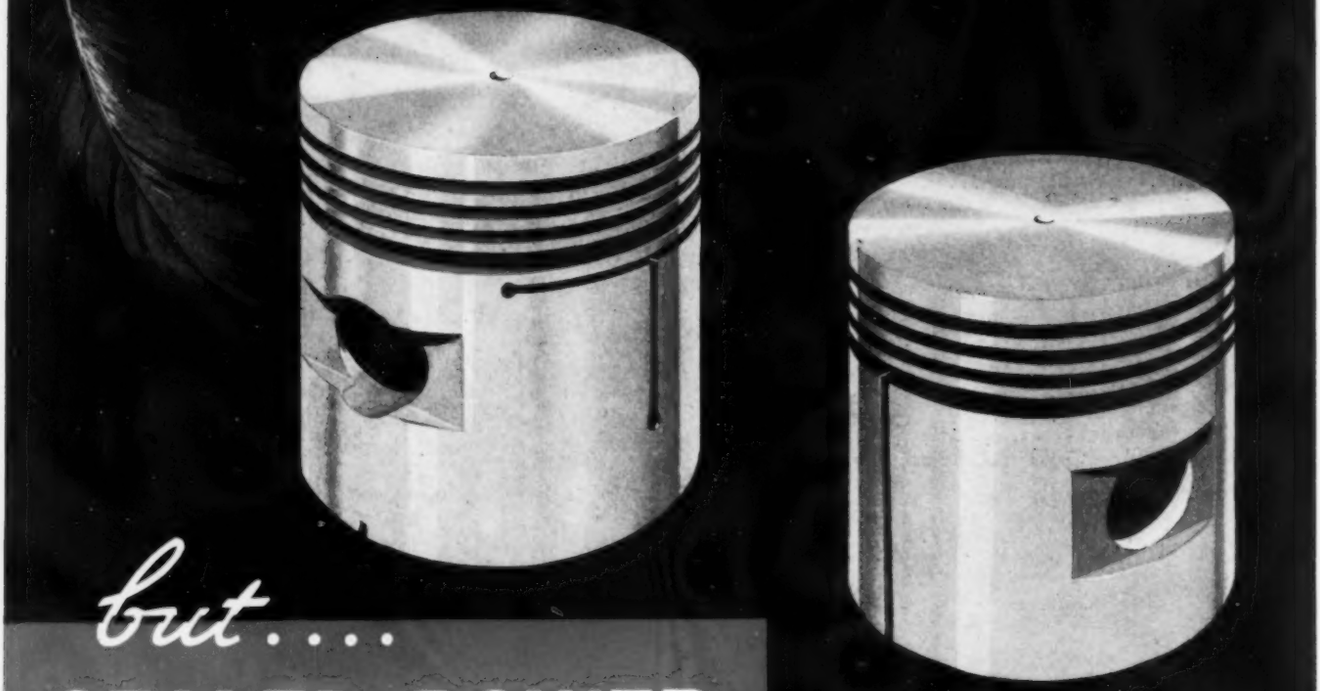

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are much lighter in weight

There's a vast difference in aluminum pistons. And you'll find the advantages are all on the side of Sealed Power Lo-Ex*.

These great pistons are far lighter in weight. Thus, engine bearings last longer. And they give maximum heat flow. They insure minimum oil consumption. They form less carbon. And they have low coefficient of expansion, permitting close clearance.

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Sealed Power Double Lapped Piston Pins are made from special analysis steel. All pins given 3 heat treatments. Held to 2 ten-thousandths of an inch for diameter and parallelism of diameter.

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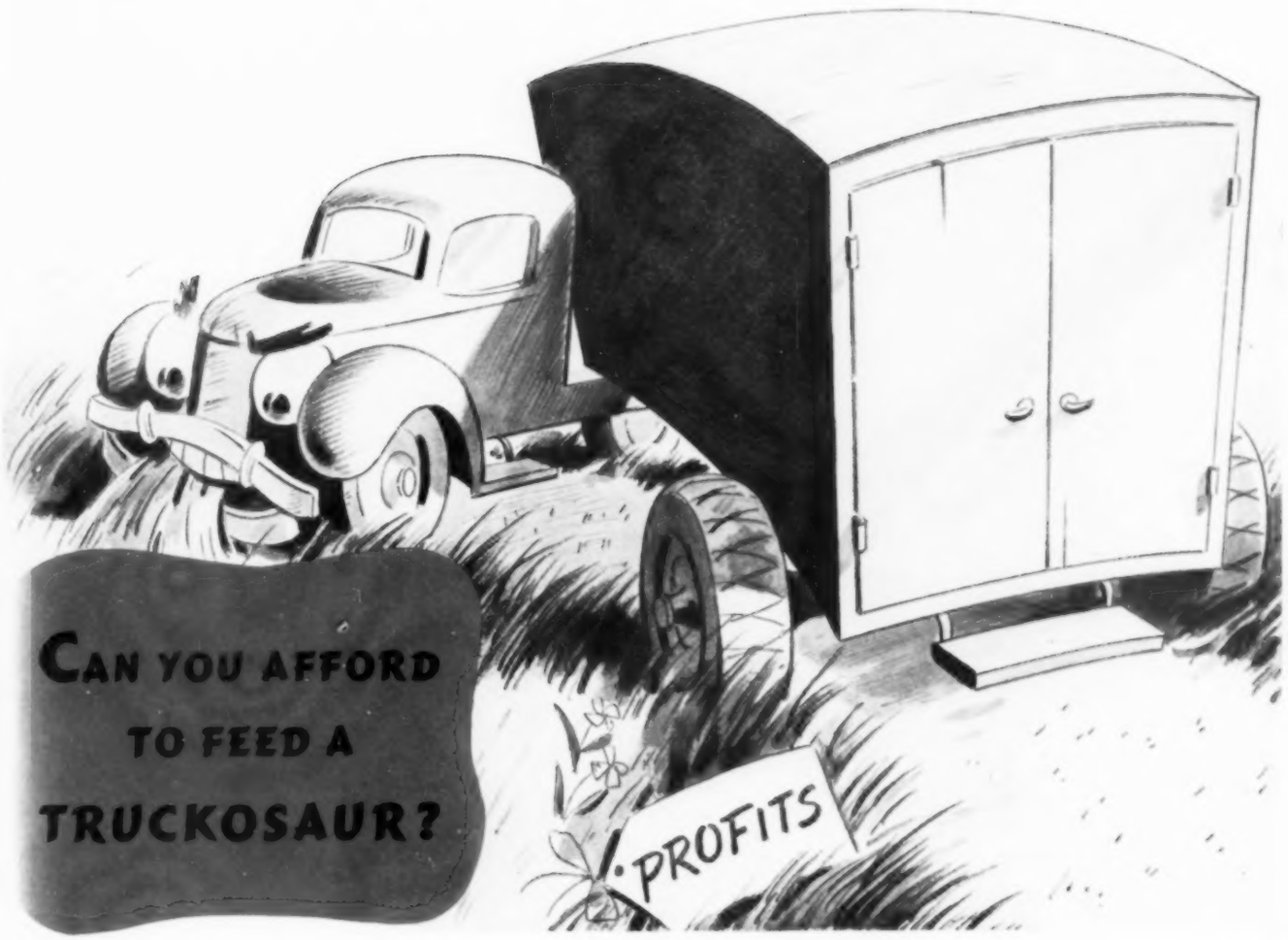
Muskegon, Michigan • Canadian Factory at Walkerville, Ont.

Manufacturers of Piston Rings, Pins, Pistons, Expanders, Valves and Cylinder Sleeves



Dinosaurs died off long ago. Their bodies were too heavy, too inefficient. In 1937, trucks with bodies built of heavy materials are likewise too wasteful to survive — so call them Truckosaurs. They eat up profits. Truckosaurs are being replaced by trucks with light bodies built from Alloys of Alcoa Aluminum. They haul less dead weight, but many pounds more of profitable payload.

Higher costs and hotter competition of today intensify the need for efficiency. That's why more and more truck bodies are built light, from light, strong Alcoa Aluminum Alloys. They cut hauling costs painlessly. At the right is a list indicating some of the benefits you may expect; for the full story, send for the free handbook.

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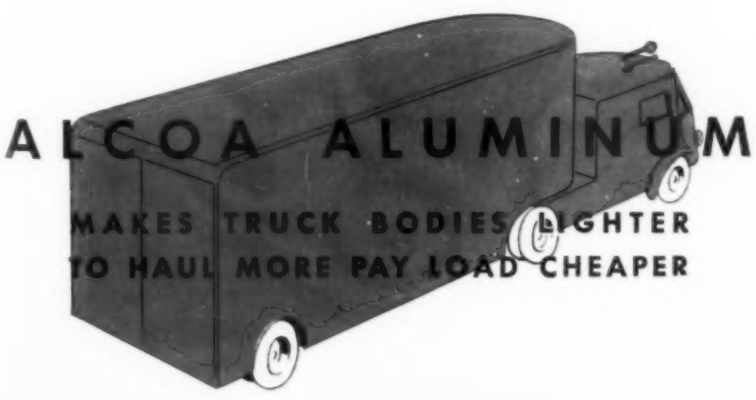

DO YOUR TRUCKS MEASURE UP?

STRENGTH WITH LIGHTNESS results when you build with light, strong Alloys of Alcoa Aluminum. The material itself is light, so sections can be made thick, stiff, and strong. We cooperate with body builders to help you get the best results.

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CASES AND COST ANALYSES drawn from records of users show, plainer than words, what you can expect. Let us send you the free handbook, "Alcoa Aluminum for Truck Bodies," recording full experiences of many users. ALUMINUM COMPANY OF AMERICA, 2161 Gulf Building, Pittsburgh, Pennsylvania.

For tough jobs....a tough piston ring

SEALED POWER PISTON RINGS

cut oil costs to a minimum

"Monitor Notch"

Sealed Power Rings have a record for being tough. Factory engineers know this record—thus specify Sealed Power Rings as original equipment in America's leading trucks.

And fleet operators know this record, too. Accurate cost records prove Sealed Power Rings last longer—that they cut oil bills to a minimum—restore the pep and power that mean faster schedules.

On rebore jobs, use either Sealed Power conventional or Sta-Tite Rings. (And Sealed Power Lo-Ex Pistons, too.) But for that in-between ring change—when you want to get 40,000, 50,000 extra miles before reboring, use Sealed Power Sta-Tites—for the reasons listed to the right.

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SEALED POWER STA-TITE

Thousands of America's ace fleet mechanics prefer Sealed Power "Sta-Tites"—because experience proves they simply outperform other expander rings. Only the "Sta-Tite" has the Monitor Notch which alone prevents gap-end flutter. Only the "Sta-Tite" varies the number of inner spring crimps with the size of the outer ring. And only the "Sta-Tite" oil ring is of Super-Drainoil design—assuring free oil drainage and preventing carbon clogging. By every standard—a great ring.

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